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GENERAL PLAN

city planning Burlingame

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July 1, 1976

GENERAL PLAN FOR BURLINGAME

The initial General Plan includes:

Goals and General Organization
and these elements -
Land Use Element
Circulation Element
Waterfront Element
Housing Element, a Preliminary Examination

Approved by the City Planning Commission July 28, 1969
by Resolution 1-69

Adopted by the City Council October 20, 1969
by Resolution 87-69

Additional elements are:	<u>Date Adopted by City Council</u>	<u>Resolution No.</u>
Open Space Element	June 4, 1973	40-73
Conservation Element	August 6, 1973	58-73
Seismic Safety Element	July 21, 1975	51-75
Safety Element	August 18, 1975	60-75
Scenic Roads and Highways Element	September 15, 1975	68-75
Noise Element	September 15, 1975	69-75

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INTRODUCTION

This document, consisting of Parts I, II and III, comprises the General Plan of the City of Burlingame. Part I is text setting forth goals, objectives and policies applying generally throughout the City, together with a description of the proposed general organization of land uses and circulation facilities. Part II presents the following elements of the plan:

1. Land Use Element
2. Circulation Element
3. Waterfront Element
4. Housing Element
5. Open Space Element
6. Conservation Element
7. Seismic Safety Element
8. Safety Element
9. Scenic Roads and Highways Element
10. Noise Element

If, in the future, City-wide plans are prepared for other functional aspects of the City, such elements would be added to Part II of the Plan. Part III is the City-wide Plan Diagram.

Part IV is reserved for general plans for sub-areas since in addition to the City-wide General Plan there is sometimes a need for a general plan for a sub-area within the City. Such plans are policy oriented but more detailed and somewhat more specific than the City-wide General Plan. Sub-area plans should be prepared for the waterfront area and for the Burlingame Avenue and Broadway shopping districts.

The General Plan in its present form focuses primarily on physical development. It is a City-wide plan for future development looking 15-20 years ahead. It is general, including primarily goals and policies rather than presenting specific detailed proposals. The emphasis is on relationships between the functional parts of the City rather than on specific location or exact extent of facilities or uses. The General Plan is an expression of intent and by itself is not an effective instrument for accomplishing City goals and objectives. It provides a framework within which individuals can make decisions, but its primary function is to provide guidance for actions and decisions by the City. Specific actions will be needed including measures to influence actions by other governmental jurisdictions, expenditure of funds for City projects and imposition of controls through such means as zoning and subdivision regulations.

PART I - GOALS AND GENERAL ORGANIZATION

1. COMMUNITY GOALS

Goals for Burlingame will be meaningful only if they relate realistically to the powers and resources of the citizens and the city government. Community goals must also relate to the larger forces at work at national, state and regional levels that are giving shape to our economy and institutions and affecting the quality of our environment. And, most specifically, goals for Burlingame must be related to the forces at work in the San Francisco Bay Area. Since Burlingame has little or no control over the many external forces that will influence its future, it is necessary to identify some of the more significant general conditions that appear likely to prevail in the future. If actual conditions prove to be different than those assumed, it will be necessary for the City to re-evaluate its goals and objectives.

Assumptions

1. California and the Bay Area will continue to experience an increase in total population and a changing composition of population, with increasing percentages of senior citizens and non-whites, a decreasing percentage of young people, smaller households, and increasing levels of educational attainment.
2. In the Nation, State, and Bay Area there will be a continuing increase in the production of goods and services and in the average productivity per worker, resulting in a continuing rise of real income and a broader distribution thereof among the population.
3. There will be continued decline in the number of hours per average work week and in the average annual hours of labor per worker, resulting in increased leisure and thus more time for recreational activities for many people.
4. The residents of California and the Bay Area will demand greater convenience and amenity from their residential, working, and recreational areas.

National Goals

These words from the Report of the President's Commission on National Goals provide a basic context within which community goals can be developed.

The paramount goal of the United States was set long ago. It is to guard the rights of the individual, to ensure his development and to enlarge his opportunity Our enduring aim is to build a nation and help build a world in which every human shall be free to develop his capacities to the fullest.*

* The Report of the President's Commission on National Goals, Goals for Americans, 1960.

General Goals

The goals included below are very general in nature. They are intended to reflect basic aims of the majority of citizens. Most people have a general goal of "the good life" or "the better life." These terms, of course, mean different things to different people, and even in a community the size of Burlingame there is a diversity of individual goals requiring a variety of opportunities, facilities, and services. Providing for the differing needs and aspirations of the people of the City will require compromise and allocation of resources.

1. Economic expansion and a higher level of real income.
2. Educational, cultural, and aesthetic advancement.
3. Betterment of social, institutional, and governmental relationships.
4. Improvement of the physical environment, facilities, and services for living.
5. Maximum freedom of choice for individuals consistent with the attainment of other goals.

Community Development Goals

The following statements reflect our current understanding of the goals of the people of Burlingame for their City:

1. Assure that Burlingame will continue to be a "well-rounded" city with residences, schools, business, industry, and space and facilities for social, recreational and cultural activities.
2. Maintain and enhance the identity of the City and encourage a maximum sense of identification by residents with the City.
3. Maintain and strengthen local sources of revenue to enable the City to continue to provide services and facilities at present or improved levels without increasing local tax rates.
4. Maintain and improve the quality of the environment to preserve the public health and enhance the prospects for enjoyment by residents and visitors.
5. Enhance the local economy and the prospects for economic well being for all residents.

These are very general goals and, if they are to be effective as policy guides, more specific objectives must stem from them. The more specific objectives should then lead to action programs to be undertaken by the City and by residents, land owners, business establishments, and organizations representing various interest groups in the City.

Under subsequent headings implementing objectives are linked to each general goal. These statements of community development goals and implementing objectives focus on physical development - land use, public facilities and services, and circulation.

1. GOAL: To assure that Burlingame will continue to be a "well-rounded" city with residences, schools, business, industry, and space and facilities for social, recreational and cultural activities.

Implementing Objectives

- a. Maintain or increase the variety in uses of land in the City.
- b. Maintain a variety of sites differing in size and location suitable for a wide range of activities.
- c. Encourage assembly of small lots in suitable locations to provide larger sites for apartments, office buildings, and commercial enterprises.
- d. Encourage the establishment of businesses, professional offices and institutions to serve residents.
- e. Keep codes and standards free of arbitrary or obsolete provisions that would tend to inhibit construction of sound buildings in suitable locations to house a variety of uses.
- f. Provide for and accommodate a range of types of transportation facilities, public and private, to meet the diverse needs of the various segments of the population and business enterprises.
- g. Provide a wide range of public facilities and services (parks, cultural facilities, utilities, schools, etc.) to serve residents and business enterprises.

2. GOAL: To maintain and enhance the identity of the City and encourage a maximum sense of identification by residents with the City.

Implementing Objectives

- a. Maintain and enhance rational relationships among functional parts of the City (residential areas, business districts, industrial areas, public areas, transportation, etc.).
- b. Provide improved connections (vehicular and pedestrian) for portions of City now isolated by barriers, e.g., railroads, freeways.
- c. Establish a pattern of dominance and subordination in important visual features; create harmony with diversity.
- d. Create distinctive visual qualities - a Burlingame image (analyze existing visual qualities and build on the best of these).
- e. Develop identifying features at entrances to the community and at focal points; encourage construction of buildings adequate in scale and height to provide identifying elements.

- f. Use trees of appropriate size and character as a design framework to enhance a sense of identity.
 - g. Use "street furniture" distinctive in design and color.
3. GOAL: To maintain and strengthen local sources of revenue to enable the City to continue to provide services and facilities at present or improved levels without increasing local tax rates.

Implementing Objectives

- a. Maintain reasonable balance between those land uses providing high tax revenue and low service costs, and those uses with high service costs and low revenue yield.
 - b. Require quality and permanence in site improvements and land development projects to minimize depreciation.
 - c. Require forward-looking design to minimize obsolescence.
 - d. Encourage sound construction and good maintenance for all buildings.
 - e. Enhance land values and economic opportunity by providing efficient connections between functional parts of the City and good access to land to permit development of uses appropriate in type and intensity without undue congestion.
4. GOAL: To maintain and improve the quality of the environment to preserve the public health and enhance the prospects for enjoyment by residents and visitors.

Implementing Objectives

- a. Insure levels of air quality compatible with the preservation of public health, including prevention of irritation to the senses, interference with visibility, and damage to vegetation.
- b. Maintain and improve the quality of water in San Francisco Bay and in the streams flowing through the City.
- c. Maintain the pleasant appearance prevailing in most of the City's residential areas and improve the visual quality in areas of less satisfactory appearance.
- d. Improve the visual quality of commercial and industrial areas with particular attention to the Central Business District, Broadway, and the industrial areas viewed from major highways.
- e. Protect the citizens of the community against excessive noise.
- f. Assure opportunities for privacy in places of residence, work, and business, and for leisure pursuits.

- g. Provide or encourage the provision of places of meeting for social and cultural interchange and the pursuit of group objectives.

5. GOAL: To enhance the local economy and the prospects for economic well being for all residents.

Implementing Objectives

- a. Take full advantage of Burlingame's strategic location, close to the regional center of the San Francisco Bay Area, adjacent to the International Airport, and on the major traffic routes linking San Francisco with other parts of the State.
- b. Improve the functional efficiency and safety of the circulation system.
- c. Minimize disruptive effects of vehicular movement on the community (noise, air pollution, vibration, glare, congestion).
- d. Improve the functional efficiency, character and quality of the Central and other business districts.

2. GENERAL ORGANIZATION - LAND USES AND CIRCULATION

The proposals for the uses of land and the circulation system derive from and recognize the role and location of Burlingame in the San Francisco Bay Area. They are also conditioned by the topographic and other conditions existing within the City and relationships to existing and anticipated development in immediately adjoining areas. The waters of the Bay and the San Francisco International Airport to the North, the City of San Francisco watershed lands to the west, the low density, high value residential development in Hillsborough, the shopping and service centers in the City of San Mateo, and the regional center for employment, shopping and service in San Francisco, are all major factors conditioning future use and development in Burlingame. In this plan primary emphasis is given to preserving and enhancing existing development of good quality. Proposals are also included which are designed to overcome existing problems and to respond to opportunities for development in new areas or rebuilding of older areas.

The uses of land in Burlingame divide into three major components: residential areas with related facilities for serving local residents; industrial areas with wholesale businesses, administrative and professional offices and some manufacturing establishments; and the waterfront, now largely undeveloped but providing great opportunities for public and commercial recreation and other water related uses.

Commercial Centers

The three existing shopping and service centers are recognized - Burlingame Plaza, Broadway, and Burlingame Avenue-Park Road.

No major changes in use are recommended for the Burlingame Plaza area. This complex of consumer service activities, administrative offices, hospital, and medical offices is relatively new and, in general, in good condition. The shopping center primarily serves local residents.

Some expansion of commercial activities at the Broadway center and linking of this center with commercial-industrial uses on the northern side of the railroad is recommended.

The Burlingame Avenue-Park Road center should continue to serve a wider clientele and in addition to providing goods and services for local residents, should include space for outlets providing consumer goods to serve residents of a wider area. It should also provide space for business service establishments and administrative and professional offices. This shopping and service center would be surrounded by medium high and high density residential development and institutional uses. Major public uses nearby include Burlingame High School and Washington Park (the present city-wide park) located just to the north but separated by the Southern Pacific Railroad. The new City Hall and the present main City Library are just to the west of the center of retail activity in this complex.

Major Recreational Areas and Open Spaces

Three community parks of widely differing characteristics will serve the City - Washington Park presently developed with a community center building and sports and game fields, picnic areas and areas for less intensive uses; Mills Canyon Park, a natural preserve, now being opened for use; and Bayside Park now being designed and developed. Acquisition of the undeveloped lands between Junipero Serra Freeway and Skyline Boulevard for an additional natural preserve is recommended.

Open spaces in or adjoining Burlingame include the waters of San Francisco Bay on the north and the San Francisco watershed lands west of Junipero Serra Freeway. These open spaces contribute immeasurably to the amenity and quality of living in Burlingame and their preservation is of overriding importance to the City.

Circulation

The system of circulation proposed in this plan recognizes Burlingame's situation astride a major transportation corridor on the San Mateo Peninsula. An integrated system of circulation facilities is recommended to link Burlingame to other parts of the Bay Area, permit traffic to move through the City with minimum impact on adjoining areas, and link residential areas with activity centers in the City. This system would coordinate rapid transit, local public transit, auto parking, and through and local auto traffic. Special consideration should be given to the location and character of traffic carriers to ensure their compatibility with adjoining uses and to provide a framework within which each sub-area of the City can develop its own special characteristics and sense of local identity.

PART II - ELEMENTS OF THE PLAN

This part of the plan treats basic elements of community development under separate headings. Each element includes descriptions of plan proposals together with principles, standards and criteria related to the particular element. The descriptive sections of this text provide an amplification of the information portrayed on the Plan Diagram, Part III of this Plan.

Parts II and III are highly interdependent and each in essence constitutes an amplification of information included in the other.

1. LAND USE ELEMENT

The land use element describes categories of uses, indicates proposed land use relationships and indicates proposed land use relationships and identifies in general terms actions needed to achieve community goals.

For the purposes of this plan land uses are grouped in the following major categories: Residential Uses, Institutions, Parks, Commercial Uses, Industrial Uses, and Circulation. Each of these categories is discussed under a separate heading in subsequent sections. These categories and sub-categories are shown on the plan diagram which portrays general relationships between the various uses of land and between land uses and circulation facilities. The diagram is not intended to indicate exact boundaries or extent of the areas. In some instances it may be appropriate for certain types of use areas to overlap so that uses of different categories actually interpenetrate. This would be true of office, shopping and service uses, and high density residential uses when buildings and sites are appropriately designed.

Residential Uses

Four categories of residential densities with the following ranges of dwelling units per net residential acre are included and shown on the plan diagram: low density up to 8 dwelling units per acre; medium density 9 to 20; medium high density 21 to 50; and high density over 50 dwelling units per acre.

An area northwest of the Burlingame Avenue-Park Road shopping center is designated for high density residential uses in recognition of its special locational advantages. It has good access to all forms of transportation and proximity to the major downtown area in Burlingame. The dominant building type envisaged for this area is multi-story apartment buildings.

Areas for medium high density residential uses are designated around the periphery of the Burlingame Avenue-Park Road center, around the Broadway shopping center, and as a part of the complex of activities in the Burlingame Plaza area. In addition, the frontage along most of El Camino Real is included in this category. The medium high density residential areas in many instances provide a transition between higher intensity uses and adjoining lower intensity uses. The typical building type contemplated for the medium high density area is the two to three story apartment building but higher buildings would also be appropriate.

Medium density areas shown on the plan diagram would be occupied in the main by duplexes and one and two story garden apartment developments.

Low density areas with single-family detached residences, occupy the remainder of the City. For the most part existing low density residential areas are well maintained and of good quality, requiring only that present zoning be maintained to ensure protection for the useful life of the dwellings (20, 30 or more years).

Institutional Uses

The following types of institutional uses are provided for: civic buildings, public schools, private schools and churches, and other quasi-public and private institutions.

Civic Buildings. The new site for City Hall on Bellevue Avenue, with the main library across the corner of the street, provides a locus for other civic buildings and institutional activities serving the entire City. No specific recommendations are included at this time for additional public buildings, however. A new police station built about five years ago on Howard Avenue should be retained for the present although the site is not large enough to provide for expansion. Other civic buildings include the United States Post Office on Park Road, which is in a good location to serve the downtown district; the main library previously mentioned; and branch library on Easton Drive. No specific proposals for library expansion are included since this subject is under separate study. In addition to the three existing fire stations it is recommended that the site next to Cuernavaca Park be retained for further consideration for a new station.

Public Schools. All existing school sites within the City are recognized on the plan diagram except the Pershing School which is recommended to be converted to a neighborhood center and neighborhood park. Most of the schools in Burlingame are on sites that are too small to provide suitable plants for educational purposes let alone any local neighborhood or community use. A special study of the school site and plant requirements should be undertaken in collaboration with the Burlingame Elementary School District and the San Mateo Union High School District. However, since the City is not currently faced with a large increase in school population it would probably be wise to defer such a study until the results of the 1970 census are available to provide more information on population characteristics and trends and thus better guidelines for probable school plant requirements. In addition, the issue of school district unification is still not settled and unification could make a considerable difference in the utilization of school plants in and around Burlingame.

Private Schools and Churches. Existing private schools are recognized on the plan diagram. In the main these are reasonably well located with good access from arterial or collector streets. Existing churches are also recognized on the plan diagram and again, in the main, are quite well located in relation to arterial and collector streets. The private schools and churches are recognized in this plan primarily to indicate their relationship to other uses of land and the circulation system.

Other Institutional Uses. Other institutional uses including facilities to serve members of associations, fraternal organizations, youth groups, social and welfare organizations, should be located in or adjacent to the business districts.

Standards and Requirements. Any new institutional uses serving city-wide or larger areas should be located on arterial streets, and preferably adjacent to commercial centers. Institutional uses serving a sub-unit of the City should be located on an arterial or collector street and in a location providing ready access to the area served. The City should establish a new zoning district to apply to all sites on which there are institutional or public uses. The regulations for this district should permit the continuance of existing uses and prohibit changes in use without City authorization. This would permit the City to take appropriate action to ensure that potential sites for parks, and buildings suitable for public assembly are not lost to public use.

Parks

Three classes of parks and open spaces are included in the plan: community parks, neighborhood parks, and preserves.

Community parks include the three existing park sites - Bayside Park, Washington Park, and Mills Canyon Park - and a proposed new area for a natural park between Skyline Boulevard and Junipero Serra Freeway on presently undeveloped land. The areas indicated as preserves include a steep hillside along Canyon Drive in Burlingame Hills where a scenic easement should be established to protect existing vegetation and ensure that this beautiful area will remain in its present wooded condition providing both scenic amenity and protection against erosion and damage to the creek channel. The other area indicated as a preserve is adjacent to Mills Canyon Park. In this case it would be most desirable if the lands on the southwest side of the creek were acquired in fee and added to the park. If this is not possible or practical, a scenic easement should be acquired to protect existing vegetation in this canyon.

The plan diagram shows a park strip around the Anza Airport Park industrial subdivision and along the lagoon between that subdivision and Bayshore Freeway. Part of this would be on land now leased to the City along the lagoon. An easement should be acquired to provide for public walks along the Bay side of the property. In addition, specific provision should be made for a pedestrian crossing of the arterial road proposed along the Bay front between the City's park and the waters of the Bay. Where this road adjoins the park, it should be kept at the lowest possible elevation to minimize the effect of traffic on the park. This will be discussed in further detail in the subsequent section of this plan dealing with the waterfront.

Neighborhood Parks. All existing neighborhood parks are recommended to be continued. In addition, new neighborhood parks are recommended in the following general locations: in the Easton Drive area between Bernal Avenue and El Camino Real; in the Mills Estate area north of Trousdale Drive between Sebastian Drive and Ashton Avenue; in the area between Carolan Avenue and Bayshore Boulevard north of Oak Grove Avenue; south of Carmelita Avenue near Paloma Avenue; on the Pershing School site. As has been done in the past, it is recommended that the City acquire individual lots where they become available in these general areas.

In addition, to augment the small sites of many of the existing neighborhood parks and elementary schools, acquisition of adjoining lots is recommended whenever such become available. In some instances street closings of very short sections of streets could be used to augment existing sites or to link schools and parks together. In some instances such closings would increase traffic safety in addition to providing very much needed park space.

Commercial Uses

Three complexes of commercial uses are included in this plan: the Burlingame Plaza Area, the Broadway center, and the Burlingame Avenue-Park Road center. In these centers of commercial activity three general categories of commercial uses are shown on the plan diagram: Shopping and Service, Service and Special Sales, and Office Use. In addition to the commercial uses in these three centers of activity an additional category of commercial use, Waterfront-Commercial, is indicated along most of the waterfront area.

Burlingame Plaza Area. This area includes outlets providing convenience goods and consumer services to local residents and workers; the Peninsula Hospital and medical offices; and other professional-administrative offices. No changes are recommended in the pattern of uses presently established. The visual quality of the shopping center should be improved and the parking area serving the shopping center needs redesign and tree planting to improve functional efficiency and appearance.

Broadway Center. Outlets in this center now provide convenience goods and consumer services for residents in the general vicinity. Although many of the businesses here are well established and apparently successful enterprises, better circulation, more parking, and better urban design would enhance this center. Separation of vehicular and pedestrian circulation and reduction of through-traffic on Broadway is needed. Recommendations for improving the traffic circulation pattern are presented in the Circulation Element. These include a grade separation for the railroad tracks and improvement of the Broadway-Bayshore Freeway interchange to relieve traffic congestion at that point. Consideration should be given to creating a pedestrian precinct on Broadway in the section between Laguna Avenue and Capuchino Avenue. Additional off-street parking should be provided to the rear of present business outlets fronting on Broadway with access to such lots from the new streets indicated on the plan diagram. An urban design plan should be developed for this center to provide more detailed guidance for future changes.

Burlingame Avenue-Park Road Center. This center includes outlets providing a wide range of consumer goods and services for Burlingame residents and residents of adjoining communities. It also includes business service establishments, business and professional offices, civic buildings, and some residential uses. The following organization of uses within the center is recommended: shopping goods outlets should, in the main, be located along Burlingame Avenue and Park Road in a pedestrian precinct; convenience goods stores, restaurants, and consumer service outlets should not occupy ground level street frontage space in the heart of the center but should be in more peripheral locations; the frontage of the west side

of Chapin Avenue should be limited to office uses; the Service and Special Sales area indicated along California Drive and Highland Avenue recognizes the existing auto sales and service activities and provides space for expansion of "auto row" businesses or other similar kinds of activity; an area between Highland Avenue and Park Road is designated for medium high density residential development. This downtown center presents a prime opportunity to develop combinations of retail, office and residential uses in clusters of appropriately designed structures. Sites on the periphery would be appropriate for apartments for single persons and families without children particularly those who want the advantages of a location near a center of activity and do not wish to own an automobile. Areas designated for shopping and service uses along Park and Primrose Roads south of Howard Avenue are appropriate locations for office and institutional uses in addition to retail and consumer service establishments. Measures to enhance appearance and attractiveness of this area should be given particular attention so as to provide an inviting entrance to Burlingame's downtown center.

Appropriate concepts for physical design and beautification should be applied throughout the center. An urban design plan for the entire downtown area should be developed. The relationship between future development of the downtown area and rapid transit and other aspects of the circulation system are discussed in the Circulation Element of this plan.

Waterfront-Commercial. The areas indicated on the plan diagram for waterfront-commercial uses should be limited to activities that either depend on waterfront location or directly benefit from location on the waterfront. Further guidelines for development of the waterfront are presented in the Waterfront Element of the plan.

Industrial Uses

The areas indicated in this category on the plan diagram are intended to continue the present pattern with occupancy by wholesale outlets, professional and administrative offices, and light manufacturing plants. The major problems now existing in these areas are inadequate access and lack of public transportation. Recommendations regarding these problems are included in the Circulation Element of the plan. It is anticipated that the East Millsdale area will be increasingly sought as a location for airport-related uses.

2. CIRCULATION ELEMENT

An integrated system is proposed including the present Southern Pacific Railroad (primarily for through movement of freight), a rapid transit line adjacent to the Southern Pacific rail line, local transit, and four categories of streets and highways. The street and highway system would accommodate private passenger automobiles, trucks and local transit vehicles.

Transit

An integrated system of regional rapid transit and local transit should be developed to serve Burlingame residents and workers and to provide for the high volume through-movement that will have to be accommodated in this corridor in the future. The rapid transit line should be completely grade separated, designed to minimize noise and prevent adverse visual impact on the community, and have sufficient grade separated local street crossings to keep the line from being a barrier.

No specific recommendation is included regarding station location; however, an opportunity exists to include the station as an integral element of a complex of service and shopping facilities, together with office and high density residential accommodations. Consideration should be given to developing a mega-structure - a complex of buildings - that would bridge over existing streets and rights-of-way, using air rights, to provide a focal point in the community and serve to connect and link together portions of the City lying on different sides of the transit and rail lines.

Advantage should be taken by the 300 foot strip occupied by Carolan Avenue, the Railroad and California Drive. This strip linking Burlingame Avenue-Park Road shopping area with the Broadway shopping center provides an opportunity for exciting visual design and the development of an efficient local transportation system to provide the backbone of a local distribution and feeder transit system. Mini buses and small electric drive-yourself vehicles designed strictly for local travel could become important parts of the local transit system. Innovative use of existing and new types of vehicles would make possible higher density development around the Burlingame Avenue and Broadway centers with increasing amenity rather than the greater congestion that would result from continued exclusive dependence on the private automobile.

Streets and Highways

Bayshore Freeway and Junipero Serra Freeway are recognized in the plan. The main proposals affecting the freeways are additions and improvements to the interchanges at Millbrae Avenue, Broadway, and Peninsula Avenue to provide for full directional movement at each of these interchanges and to accommodate the increasing volumes of traffic that will be generated, particularly from the industrial areas.

A system of major arterials is proposed to take care of longer distance local trips and to connect Burlingame with adjacent communities. These include El Camino Real (a State highway), California Drive, and Bayshore Highway and its extension through the Anza Pacific development for major north-south movements. The latter route would connect with the San Francisco Airport on

the north and with the major street system in the City of San Mateo on the south. The relationship of this route to Burlingame's Bayside Park is unfortunate but, with existing conditions, there does not seem to be any practical solution that would avoid separating the park from the Bay. Special care will be needed in designing this street. The portion abutting the City Park should be located outboard of the present bulkhead to avoid reducing the park area. Particular attention should be given to visual quality, provision of pedestrian crossings, and minimizing the impact of industrial traffic on the recreational use of the park and the waterfront. Other major arterials include Millbrae Avenue (in the City of Millbrae), Trousdale Drive, Carmelita Avenue from El Camino Real to California Drive and a connection to a grade separation at Broadway and the railroad, Oak Grove Avenue and Peninsula Avenue. These arterials would carry the major volume of east-west trips and connect with State highways and freeways.

The other elements of the street system are secondary arterials connecting collector and local access streets to the major arterials, and collector streets to feed traffic to the arterials and major centers of activity in Burlingame. The systems of streets proposed around the Broadway shopping center and the Burlingame Avenue shopping center are of particular importance. These are intended to provide movement around the centers, connect to parking lots, and permit the central portions of these shopping centers to be freed of all or most vehicular traffic and turned over primarily to pedestrians.

Grade Separation Structures

Railroad grade separations are recommended at Broadway, Oak Grove, Howard, and Peninsula Avenues. A highway overpass is needed across Bayshore Freeway to connect Millsdale and East Millsdale Industrial areas. (See also proposals under the heading, Broadway-Bayshore Interchange Area.) In addition, an overpass to accommodate pedestrians and bicyclists is recommended to connect to the Bayside Park from the vicinity of Winchester Drive.

Parkway

In addition to the other elements of the circulation system, it is recommended that a parkway be established along the Bayfront connecting Burlingame's Bayside Park with San Mateo County's Coyote Point Park. No specific location is proposed. This should be worked out in developing more specific plans for the waterfront, using the Bay Conservation and Development Commission Plan as a guide.

Broadway-Bayshore Interchange Area

Major changes are needed in the circulation system around the Bayshore-Broadway interchange and the proposed grade separation at Broadway and the railroad. The changes should be designed to:

1. Reduce the congestion at the present intersection at Rollins Road and Broadway by providing other means of access to Millsdale and by reducing points of conflict.
2. Provide as much flexibility as possible so that future changes in travel patterns can be accommodated within the system.

3. Provide alternative routes of travel so that individual drivers have some options to permit them to avoid points of congestion. (Traffic flow tends to be somewhat self-adjusting where alternative paths of travel are available.)
4. Increase capacity throughout the Broadway-Bayshore Area by reducing conflicts through traffic control measures, providing added lanes at critical points, and grade separating turning movements wherever feasible.

More specific proposals are:

1. Grade separate Broadway and the Southern Pacific Railroad.
2. Provide two completely new links to permit some traffic to avoid the Broadway-Rollins Road intersection. One of these should connect the Millsdale and East Millsdale Industrial areas with an overpass on Bayshore Freeway. The other link proposed is a new street southeast of Cadillac Way extending from Bayshore Boulevard to Carolan Avenue. This new street should be obtained when the presently vacant land is developed.
3. On Bayshore Freeway, move the entrance to the southbound off-ramp as far north as possible and provide connections to Marsten Road, Broadway and Cadillac Way.

3. WATERFRONT ELEMENT

The objectives of this element of the plan are to:

1. Increase public access to the shoreline and the waters of the Bay.
2. Provide sites for commercial uses that would afford significant opportunities for use and enjoyment of waterfront situations by the public.
3. Improve the visual and functional qualities of the shoreline and protect and enhance the quality of the waters of the Bay.
4. Enhance public use and enjoyment of the Bay and its shores while providing opportunities for private owners to obtain proper returns from legitimate rights and interests in privately owned lands.
5. Protect the tidelands and the waters of the Bay as important regional resources.
6. Enhance the habitat for fish and wildlife and increase the stock of fish and wildlife for passive enjoyment and sport and commercial fishing.
7. Accommodate the results of expansion at the San Francisco Airport to the extent possible without additional fill.

Future Policy and Planning for the Waterfront

If the City accepts these objectives for the waterfront, it should proceed to prepare a more specific plan and institute programs for this sub-unit of the Bay and its shores. Formulation of such a plan would be a complex undertaking and would involve collaboration with other jurisdictions and recognition of the overriding regional interests in the Bay and its shores.

The following steps are recommended to lead to the preparation of a detailed plan:

- Enact interim zoning for all lands now abutting on the waters of the Bay to protect the public interest and prevent inappropriate development during the time it will take to prepare a detailed plan for the waterfront area.
- Review the planning conclusions for the Bay and its shores presented herein together with those developed to date by regional and county agencies.
- Adopt general policy for the waterfront as part of the City's General Plan.
- Prepare a General Development Plan for the waterfront.

A general development plan for the waterfront should:

1. Provide public access to the shoreline to the greatest extent feasible in connection with all development, public and private (require dedications or acquire easements in connection with any new private development).
2. Increase the effective length of shoreline by using piers, canals or other similar design elements.
3. Create more variety along the shoreline and improve the visual quality in the area, generally; require architectural review of all structures and impose higher standards of design control for signs.
4. Develop vantage points at strategic locations along the shore for viewing the Bay, the airport and enjoying more distant vistas. (Vantage points might be created by modifying the present straight shoreline or by using piers or towers. These could occur in combination with either public or private uses and could be incorporated in buildings.)
5. Develop night-time and weekend activities designed to take advantage of parking and other facilities provided for day-time, weekday uses.
6. Solve specific problems related to expansion of San Francisco Airport, particularly traffic and access, but also respond to the need for more sites for airport related activities.

The following elements seem appropriate to include in the plan:

1. A shoreline drive to connect Burlingame's Bayside Park with Coyote Park.
2. Paths for walking and cycling along the waters edge.
3. Private uses such as restaurants, motels, commercial recreation, fishing piers, boating, marineland and other ventures related to the aquatic atmosphere.
4. A convention conference center (proximity to airport provides great advantages for one-day conferences or half-day meetings).
5. An air transport-industrial museum.
6. An overpass for pedestrian and bicyclists (perhaps leading from Winchester Drive) to cross Bayshore Freeway and provide access to the City Park and shoreline paths.
7. A highway rest stop on Bayshore Freeway about opposite Oak Grove Avenue.

8. A safe pleasant pedestrian crossing of the arterial road separating Bayside Park from the Bay.

Design Limitations, Potentials and Some Criteria for Waterfront Development

Limitations. Land bordering the Bay in the Burlingame area is flat and does not afford the visual opportunities or excitement provided in other situations where steeply sloping land meets deeper waters of the Bay. There is a low angle of view towards the Bay with extensive areas of mud flats. The longer views inboard can easily be blocked by buildings improperly designed and situated. Much of the area is underlain by soft mud requiring special foundations to support structures and special care to prevent differential settlement of buildings and grounds. The low elevation and flatness of terrain requires great care in design and construction of drainage systems. Many of the established uses have little relationship to the Bay either in character or use or design and orientation of buildings. Nature has been destroyed and present shorelines are, in the main, unattractive because of inadequate attention to "edge" treatment.

Potentials. In the Burlingame waterfront opportunities exist for such things as:

"Landmark" structures to help define and symbolize the meeting of land and water.

Ecologically sensitive restoration of the edge of the Bay with a variety of treatments.

Canals, lagoons and islands of marsh.

Piers, small promontories and "mounding" of earth to increase variety of appearance.

Design Criteria.

Avoid:

- Long, straight, unbroken shoreline
- Dikes cutting off ground level views
- Overhead utility lines
- Long expanses of buildings parallel to shore

Control:

- Signs - size and character
- Building and site design

Encourage:

- Clustering of buildings and variety in height of buildings
- Location of buildings to provide opportunities to see through from streets (and from other buildings) to the Bay
- Sensitive use of appropriate trees, bushes, and ground cover as part of the total landscape

4. HOUSING ELEMENT, A PRELIMINARY EXAMINATION

Background

In 1967, the State Legislature amended the Local Planning Law to require that each city and county prepare and adopt a housing element as a part of its General Plan. This provision of the State Law will become effective July 1, 1969. The law describes the housing element in these terms:

A housing element consisting of standards and plans for the improvement of housing and for provision of adequate sites for housing. This element of the plan shall endeavor to make adequate provision for the housing needs of all economic segments of the community.

Before a housing element can be prepared and adopted, more detailed information will be needed regarding the type, age, and condition of the housing stock; value of dwellings; housing construction trends by type of dwelling and value; and trends in the amount and nature of rehabilitation work. Also needed will be more information on housing demand and the problems Burlingame's citizens are facing in meeting their needs for housing.

Action by the State Legislature to include a housing element as a required element of community general plans reflects a growing recognition that concerted public action programs are needed to make adequate provision for the housing needs of all economic segments of the community. It has been found that zoning and building codes by themselves will not do the job.

In the process of developing this Preliminary General Plan some of the housing problems facing the Burlingame residents were identified. Some relate to the age of certain neighborhoods or the transition from one land use to another. Other problems result from changes in the character of the population which may, in turn, call for changes in City services.

In Burlingame aging neighborhoods are associated with aging people. A very high proportion of Burlingame's population in 1960 was beyond retirement age, and about one-fourth was over 55. There are concentrations of elderly in a number of neighborhoods. A more specific study should be made of the needs of older citizens in Burlingame. A high rate of turnover of households should be anticipated in certain sections of the City. There is an influx of young families and young and old single persons into some neighborhoods, particularly where apartments are being built or houses being converted to multiple occupancy. As young families grow up they tend to leave these neighborhoods.

Although generally prosperous, Burlingame has several areas with a high incidence of welfare and social problems. In these areas of Burlingame are families with low incomes and low educational levels. In the past few years hundreds of families and individuals here have been receiving some form of public assistance, such as Old Age Assistance, Aid to Dependent Children, and federal food stamps. There are many retired people living on fixed incomes, in some cases quite modest. Many of these families and individuals own their own homes and find increasing difficulty in meeting rising costs - taxes, maintenance, and repairs. This can be a severe personal problem. In addition, inadequate expenditure for maintenance and repairs, leads to deterioration of individual buildings which in turn can blight neighborhoods.

An Approach

To assist residents in meeting their housing needs while maintaining the quality and amenity characteristic of Burlingame, consideration should be given to the following possible components of a housing plan and program:

- Establishing new zoning districts specially designed to provide orderly transition from single-family or duplex uses to multi-family developments of appropriate standards.
- Definition of general amount of housing by type and value needed to meet the needs of local residents over the next 15 year period.
- Identification of supply-need "gap" under open market conditions.
- Identification of rates of obsolescence and deterioration and extent of replacement and rehabilitation required to keep pace with housing needs and to prevent blight.
- Measures designed to close the gap between supply and need; assist lower income families and individuals meet their housing needs; assure maintenance of environmental quality and amenity; provide incentives for private investment; and permit the City and its residents and property owners to benefit from Federal programs in the housing and community development field.

Such a plan and program should be developed in the context of Burlingame's relationship to San Mateo County and the San Francisco Bay Area. The Association of Bay Area Governments is engaged in a study of housing in the Bay Area. The County of San Mateo will be undertaking work toward a housing element of the County's General Plan. Coordination will be required.

OPEN SPACE ELEMENT
OF THE GENERAL PLAN
FOR THE CITY OF BURLINGAME

PLANNING COMMISSION

Frank Cistulli, Chairman
Malcolm M. Jacobs
Everett K. Kindig
Charles W. Mink
E. L. Norberg
Thomas W. Sine
Thomas C. Taylor

CITY COUNCIL

R. D. Martin, Mayor
Irving S. Amstrup
William J. Crosby
Dorothy Cusick
Victor A. Mangini

Approved by the Planning Commission on April 23, 1973

Adopted by City Council Resolution No. 40-73 on June 4, 1973

RESOLUTION NO. 40 -73

APPROVING
THE OPEN-SPACE ELEMENT
OF THE BURLINGAME GENERAL PLAN

WHEREAS, California Government Code §65302(e) requires that the General Plan shall include an open-space element as provided in Article 10.5, Open-Space Lands, (Commencing with §65560) of Chapter 3, Local Planning; and

WHEREAS, Government Code §65563 requires that on or before June 30, 1973, every city and county shall prepare, adopt and submit to the Secretary of the Resources Agency a local open-space plan for the comprehensive and long-range preservation and conservation of open-space land within its jurisdiction; and

WHEREAS, the Planning Commission of the City of Burlingame, after proceedings duly and regularly had as provided by law, did, by its Resolution No. 9-72 entitled, "Resolution to Endorse and Recommend the Interim Open-Space Element of the Burlingame General Plan", adopted August 28, 1972, approve an Interim Open-Space Plan and order it to be transmitted to the City Council for further proceedings as required by law; and

WHEREAS, the City Council of the City of Burlingame, after proceedings duly and regularly had as provided by law, did, by its Resolution No. 63-72 entitled, "Adopting Interim Open-Space Element of the General Plan", adopted October 2, 1972, adopt the Interim Open-Space Element of the General Plan as previously endorsed and recommended by the Planning Commission; and

HERBERT K. WHITE, CITY CLERK

BY Carolyn H. Hill
DEPUTY

BURLINGAME HELD ON JUNE 4, 1973.

WHEREAS, the City Planner and William Spangle & Associates, planning consultants retained by the City for the purpose, have prepared and presented a proposed Open-Space Element of the Burlingame General Plan for the consideration of the Planning Commission and of the City Council entitled, "OPEN-SPACE ELEMENT, CITY OF BURLINGAME, a Proposed Addition to the City General Plan", dated March 30, 1973, revised May 30, 1973, consisting of 3 Divisions, namely, Division I -- Definitions and Policies; Division II -- Proposals and Open-Space Action Program; and Division III -- Plan Diagram; and

WHEREAS, the Planning Commission held at least one public hearing to determine whether it should approve said Open-Space Element as an addition to the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

WHEREAS, the Planning Commission, after such public hearing, and after due consideration, by its Resolution No. 1-73 entitled "Approving the Open-Space Element of the Burlingame General Plan", adopted April 23, 1973, approved the Open-Space Element as prepared and submitted by the City Planner and William Spangle and Associates, subject to certain modifications; and

WHEREAS, the City Council, after consideration of the proposed Open-Space Element, as approved by the Planning Commission, referred certain further changes and additions to the Planning Commission for consideration and for its written report as required by Government Code §65356, and the proposed changes and additions having been considered by the Planning Commission at its regular meeting on May 30, 1973, and a copy of

its written report thereon having been filed with the City Council; and

WHEREAS, this Council has held at least one public hearing to determine whether it should adopt said Open-Space Plan as an element of the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

WHEREAS, this Council, after such public hearing, at which evidence, both oral and documentary, was heard and received, and after due consideration of the evidence and of Resolution No. 1-73 of the Planning Commission approving said Open-Space Element, subject to certain modifications, and of the copy of the written report of the Planning Commission upon changes and additions proposed by the City Council, finds that said Open-Space Element, in the form now before the Council, should be adopted.

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF BURLINGAME, that:

1. All notices required to be given and all hearings required to be held by Government Code Sections 65351 and 65355 have been given and held in the form and at the time and in the manner prescribed by law.

2. The proposed Open-Space Element of the Burlingame General Plan entitled, "OPEN-SPACE ELEMENT, CITY OF BURLINGAME, a Proposed Addition to the City General Plan", dated March 30, 1973, revised May 30, 1973, consisting of 3 Divisions, namely, Division I -- Definitions and Policies; Division II -- Proposals and Open-Space Action Program; and Division III -- Plan Diagram, is hereby adopted as and for the Open-Space Element

of the Burlingame General Plan, and as and for the Local Open-Space Plan of the City of Burlingame.

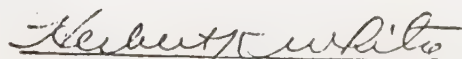
3. The Interim Open-Space Element of the Burlingame General Plan, adopted by this Council's Resolution No. 63-72 entitled "Adopting Interim Open-Space Element of the General Plan", adopted October 2, 1972, is hereby rescinded as having been superseded by the adoption of this Resolution.

4. The City Clerk be, and he is hereby, ordered to transmit copies of the Open-Space Element hereby adopted, together with certified copies of this Resolution, to the Planning Commission of the County of San Mateo, State of California, and to the Secretary of the Resources Agency of the State of California, as directed by the provisions of Sections 65360 and 65563 of the Government Code.


MAYOR

I, HERBERT K. WHITE, City Clerk of the City of Burlingame, do hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 4th day of June, 1973, and adopted thereafter by the following vote:

AYES:	COUNCILMEN:	Amstrup, Crosby, Cusick, Mangini, Martin
NOES:	COUNCILMEN:	None
ABSENT:	COUNCILMEN:	None


CITY CLERK

C O N T E N T S

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INTRODUCTION

This proposed open space element has been developed in response to requirements of the State Legislature embodied in the Planning and Zoning Law. Article 10.5, Title 5 of the Government Code requires each city and each county to prepare and adopt by June 30, 1973, an Open Space element for the comprehensive and long-range preservation of open space lands within its jurisdiction. The Open Space Element is required to include an action program indicating programs the City Council intends to pursue in implementing its open space plan. According to the state law open space land is any parcel or area of land or water which is essentially unimproved and devoted to an open space use and which is designated on a local, regional or state open space plan as any of the following:

- (1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, lakeshores, banks of rivers and streams, and watershed lands.
- (2) Open space used for the managed production of resources including, but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of ground-water basins; marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.
- (3) Open space for outdoor recreation including, but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
- (4) Open space for public health and safety including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

The Goals and Implementing Objectives, Part I of the City General Plan adopted by the City in 1969, provide the local policy context for applying the state legislative directive to Burlingame.

In formulating this Open Space Element, open space was viewed as a general three-dimensional resource made up of all the space above the surface of the earth and water not occupied by structures. Open space thus includes large and small spaces above predominantly open public and private lands and between and above buildings. State and federal definitions emphasize that size is not a limiting factor for open space, nor is public ownership of all open space intended. Further, the definitions clearly recognize that open space serves a variety of purposes.

Burlingame's open space resources were viewed as potential components of a general system of open spaces and evaluated in relationship to the state criteria and definitions and city goals and objectives. As appropriate, land areas were identified as open space lands serving one or more of the open space functions identified by the state. In addition, needs and opportunities for other forms of open space were evaluated and other open spaces were identified as necessary for health, safety or the quality of life. This system of open spaces is proposed for preservation through a variety of methods, including regulation and public acquisition in fee or lesser interest.

The Open Space Element as Part of the General Plan

The Open Space Element is intended to be supplementary to previously adopted general plan elements. In case of any conflict, the Open Space Element is intended to supersede previously adopted material but only to the extent of the conflict.

The Open Space Element includes three divisions--Division I - Definitions and Policies and Action Program; Division II - Open Space Proposals; Division III - Plan Diagram. The Open Space Element, when adopted, will become Section 5 of Part II of the General Plan. Paragraphs are numbered in sequence to assist in referencing specific portions of this element. This numbering system is consistent with that used in previously adopted portions of the General Plan.

5. OPEN SPACE ELEMENT

DIVISION I - DEFINITIONS AND POLICIES

Definitions and General Concepts

For the purpose of this element of the General Plan, open space is defined as all of the space above the surface of the earth or water which is not occupied by structures. Open space, therefore, is essentially three-dimensional. It is given definition by buildings and other structures, land forms, and prominent vegetation. 500

The concept of three-dimensionality is particularly important in open space planning for Burlingame because of the physical situation of the City extending from the Bay to the Skyline. Both hillside and flat land sections of the City are given specific recognition in this element of the plan, with policies intended to protect and enhance the open space resources and the quality of views to and from the hillsides. 501

A system of open spaces is proposed including a network of large and small spaces (preserves, parks, street space, yards, and other spaces) extending over the city-scape between and above buildings, trees, and other topographic features. This system of open spaces is considered to be made up of components of three general scales - very large (macro), intermediate, and small (micro). Macro open space serves a city-wide or regional public; intermediate open space serves a segment of the city; and micro open space serves a local or individual need. These components are defined as follows: 502

1. Macro-Scale Open Space - Spaces where the sense of openness is extensive; views encompass large expanses of water or undeveloped or primarily undeveloped land and afford a sense of considerable distance.
2. Intermediate-Scale Open Space - Spaces of intermediate scale ranging in size from 3 to 30 acres, and varying in character from natural open space areas to extensively landscaped spaces within large developments, the unifying element being the sense of openness in the middle ground with definite background limits to the view.
3. Micro-Scale Open Space - Spaces that are of a small or intimate nature where the observer is intimately confronting the limiting structures and is precluded from viewing beyond these immediate limits. Attention is usually focused on the detail of form, texture and color of foreground objects and limiting structures.

Open Space Lands

Within the general three-dimensional open space system are particularly significant open spaces - those resulting from open space lands. These are the open spaces that relate most specifically to the categories of open space lands defined in the state law* where open space land is defined as any parcel or area of land or water which is essentially unimproved and devoted to an open space use and which is designated on a local, regional or state open space plan as any of the following:

503

1. Open space for preservation of natural resources.
2. Open space used for the managed production of resources.
3. Open space for outdoor recreation.
4. Open space for public health and safety.

General Open Space

This category includes the balance of the open spaces in the planning area (city plus adjoining areas important to the city) proposed in this element of the General Plan to be preserved as open space.

504

Objectives

This element of the General Plan is intended to provide additional means of securing the Community Goals and Implementing Objectives included in Part I of this General Plan. The specific objectives of this element of the plan are to:

505

1. Preserve existing open space and open space lands to the fullest extent practicable, with spaces ranging in size from regional scale to small open spaces on individual lots.
2. Increase privacy, amenity and safety, and assure provision of light and air.
3. Preserve the important vistas, such as the hillside leading to the Skyline Ridge as seen from the Bay plain, and the Bay as seen from the hillside.
4. Provide open space for recreational needs and for the preservation of sites of historical and cultural significance.

* Article 10.5, Title 5 of the California Government Code, as amended by Assembly Bill 966 (1972).

5. Protect and maintain those areas necessary to the integrity of the natural processes with special emphasis on, but not limited to, the water regimen and air quality.
6. Protect and preserve open spaces which are vital as wildlife habitat and areas of major or unique ecological significance.
7. Maintain open space to shape and guide development and to enhance community identity.
8. Establish the basic framework for a continuing action program designed to protect valuable and limited open space resources.

Principles

506

1. Areas that contribute to the maintenance of a quality living environment for both local and sub-regional residents should be preserved as open space. Areas that fall into this category include:
 - a. Areas of visual dominance - Skyline Ridge, Canyons, Bay.
 - b. Visual corridors.
 - c. Areas of special ecological significance (wildlife and vegetation).
 - d. Areas of cultural and historic significance.
2. Areas hazardous to the public safety and welfare should be retained as open space. Areas that fall into this category include:
 - a. Slopes generally over 30 percent.
 - b. Areas of identified instability.
 - c. Streams and their flood plains.
3. Conservation easements, open space zoning and other land use regulations should be used to prohibit development on unstable terrain, water channels, flood plains, excessively steep slopes and other areas determined hazardous to public welfare and safety.
4. Open spaces should be linked together visually and, where possible, physically to form a system of open spaces.

5. A variety of vistas should be provided and preserved ranging from the small enclosed private views to the more distant views shared by many people.
6. Both public and private efforts should be directed to preserving historical landmarks which have open space value.
7. In the design and execution of all new development, owners and developers should be required to preserve open space to the fullest extent possible.
8. Measures should be taken to improve the quality of spaces for the pedestrian along roadways so the pedestrian can feel safe and comfortable while using these spaces.

Action Program

The actions needed to implement the open space plan are described with each proposal. Taken together these recommendations for implementation constitute a general action program. Implementing actions fall in three general classes: 507

1. Regulation through zoning with interim emergency action recommended in some cases.
2. Acquisition of easement rights by gift or purchase.
3. Acquisition in full fee by purchase, or gift.

Some actions need to be taken rather immediately while others can be deferred for reasonable time periods. Therefore, a time phased sequence of actions should be formulated after the open space element is adopted. 508

The following criteria are suggested to provide guidance in assigning priorities: 509

- Probability of development which would usurp the proposed open space use.
- Importance of the particular open space to the total open space program.
- Community need for early use of the area.
- Probability of acquisition by another body which would have the same open space objectives.

The program should be flexible, however, so that the City can move rapidly when circumstances are advantageous. Public acquisition includes any feasible means whereby beneficial use may be obtained, including gift, permit, license, lease, lease-back, purchase, life-estate or any combination. 510

DIVISION II - OPEN SPACE PROPOSALS AND ACTION PROGRAM

Proposals

The Open Space System

Key components in the open space system are the Bay and the watershed lands of the City of San Francisco. These open spaces provide Burlingame's superb setting. They are linked, visually, by the air space which extends over the City and is so important to the enjoyment of the views of the Bay and the more distant hills. Other large (macro-scale) components include the larger city parks, wooded canyons, and major rights-of-way for freeways, major streets, and the railroad. Smaller components (intermediate scale) include the smaller city parks, creeks, and important street rights-of-way. The micro-scale components of the system include the city mini-parks, and private yards and courts. 520

The index, following, summarizes the proposals and identifies the primary and secondary open space uses provided by each open space area. In subsequent text the open spaces comprising the system are discussed under two principal headings - General Open Space and Open Space Lands. For those open space proposals shown on the Open Space Element Plan Diagram, the number following the caption is the key number appearing on the Plan Diagram and on the index. 521

GENERAL OPEN SPACE

Air Space Over the City

This is the pervasive general open space that, in a strict sense, includes all open spaces. However, for the purposes of the action program, this component of the open space system is considered to be a residual - that is, all open space other than that included in the more specific proposals set forth below. 522

Air space defined in this way provides the following open space uses: 523

- health and safety, by providing light, air, and privacy
- recreation by permitting views of nearby and distant points, adding amenity and providing visual enjoyment

Implementation:

The air space should be protected through zoning regulations controlling building height, bulk and coverage. Where necessary for particular purposes, easements should be secured. An urban design plan 524

INDEX TO OPEN SPACE PROPOSALS AND OPEN SPACE USES

(1)	Proposal	(2) Key No.	Open Space Uses (3)			
			General Open Space	Preserva- tion of Resources	Outdoor Recrea- tion	Health & Safety
522	Air Space		x		o	o
525	Rights-of-Way as Links		x		o	
	Bayshore Freeway	1	x		o	
	Calif.Drive/S.P.RR	2	x		o	
	El Camino Real	3	x			
	I.280 Junipero Serra	4	x			
527	Private Open Space for Every Dwelling Unit		x		o	o
574	Courts & Plazas, Business District		x		o	o
529	San Francisco Bay	5		o	x	x
533	Inner Lagoon	6		x	o	x
543	City of San Francisco Watershed	7		x	o	o
553	Creek Systems			x	o	o
549	Mills Canyon Hillside	8		x	o	x
551	Russell College	9		x	o	
555	Easton Creek & Canyon Dr. Area	10		x	o	x
557	Hoover School & Canyon	11		x	o	x
531	Bayside Park	12			x	o
559	Washington Park & High School	13			x	o
547	Mills Canyon Park	14		o	x	o
545	Skyline Park	15		o	x	x
535	Outer Lagoon & Adjacent Park	16		o	x	

(1) Text paragraph number; (2) Key No. refers to
Plan Diagram;
(3) Primary Use - x; Secondary Use - o.

(1)	Proposal	(2) Key No.	Open Space Uses (3)			
			General Open Space	Preserva- tion of Resources	Outdoor Recrea- tion	Health & Safety
537	Anza Pacific, Adjacent Inner Lagoon	17			x	
525	PG&E Easement (Millsdale)	18			o	x
539	Shoreline Lands (east)	19			x	o
541	Shoreline Lands (west)	20			x	o
563	Vest-Pocket Parks				x	o
561	Eastmoor Road City Park	21			x	o
565	Ray Park and Lincoln School	22			x	o
562	Cueravaca Park	23			x	o
567	School Yards Benjamin Franklin/ Burlingame Inter- mediate School	24			x	o
569	Institutional Lands Peninsula Hospital	25			x x	o o
571	Burlingame Plaza	26			x	o
573	Downtown				x	o
572	Broadway Center				x	o

(1) Text paragraph number; (2) Key No. refers to
Plan Diagram;
(3) Primary Use - x; Secondary Use - o.

should be developed to provide the basis for establishing the specific controls needed to protect the air space, giving particular attention to developing new height, bulk, and coverage regulations for the area outboard of Bayshore Freeway.

Rights-of-way to Provide Links

To provide a connected system of open space lands, it is 525
proposed that the open space qualities of selected streets, alleys, and easements be enhanced and given special protection. Streets and other rights-of-way of particular importance are indicated on the Plan Diagram. Of these, the following are of city-wide or regional importance:

- Bayshore Freeway - U.S. 101
- El Camino Real
- Junipero Serra Freeway - I-280
- California Drive-Southern Pacific RR R/W
- PG&E and Drainage R/W (18) - The portion of this R/W in Millsdale Industrial Park is a combination drainage right-of-way and a PG&E right-of-way for power lines and towers. The portion in the Edwards Industrial Park and Marsten Road area is a PG&E easement. It is an open space resource, and measures to enhance its usefulness and improve its appearance should be explored.

Implementation:

Maintain and improve the open space and visual qualities 526
of the designated streets and rights-of-way by maintaining and, where necessary, enhancing the quality of street trees and other planting. Review front yard setback requirements and determine if additional regulations are needed to prevent encroachment into existing open spaces. Underground utilities along streets. Review street lighting and "street furniture" to determine how visual quality can be improved. Where feasible, acquire easements in locations selected to provide pedestrian links to open space lands. Particular attention should be given to securing a link from Hayward Drive to Mills Canyon Park site. When appropriately located property is offered for sale in the normal course of events, consideration should be given to acquisition.

Usable Private Open Space for Each Dwelling Unit

An objective in all new development should be to secure 527
some open space for the use of residents on each parcel.
This is particularly important where higher density buildings
replace lower density buildings since existing general open
space is encroached upon in the process.

Implementation:

Revise zoning regulations to require usable open space 528
in conjunction with each dwelling. Give consideration
to incentive provisions providing density bonus for
highly usable space such as well designed balconies or
courts.

OPEN SPACE LANDS

San Francisco Bay (5)

This is an open space resource of immense importance to 529
the region and the City, and a portion of the Bay is within
the corporate limits of Burlingame. The City and County of
San Francisco holds title to the area between the Airport
and East Millsdale. The balance is claimed by West Bay
Community Associates, a private corporation (these titles are
now in litigation). The Bay and its shoreline are under the
jurisdiction and protection of the Bay Conservation and
Development Commission as well as Burlingame. The City
maintains control through its Tidal Plain District zoning
regulations. The tidelands and waters of the Bay should be
retained in open space use for resource protection and
recreation. No fill or structures should be permitted for
purposes other than to protect public safety, enhance wildlife
habitat or improve public access.

Implementation:

Support the BCDC San Francisco Bay Plan and collaborate 530
with BCDC in preparing more precise plans for the Bay
and its shores. Review the T-P zoning district regula-
tions and, if feasible, strengthen the controls to
provide additional protection for this valuable open
space. More definite limits should be established to
restrict areas within which any land fill or structures
permanently affixed to the land can be authorized as
conditional uses by special permit. Extend limits of
T-P zoning district to include all tidal waters.

Bayside Park (12)

Develop Bayside Park as the major open space link between the land mass and the open waters of the Bay. Preserve the open space quality by keeping building coverage to the minimum needed to assure public use and enjoyment of the site. 531

Implementation:

A park development plan and program is needed for this area. To preserve open space character, limit building coverage and building height. Creative design is essential. 532

Inner Lagoon (6)

This area includes the lagoon between the Bayshore Freeway right-of-way and Anza Pacific properties and is a significant open space resource. It is part of Bayside Park and should be retained in open space use since it serves several important functions. It receives storm drain waters and is important to public safety. It is an integral part of the visual corridor. With appropriate development it can provide other outdoor recreation opportunities including shoreline walks and small boating. One area next to the freeway lands is now used as a roadside rest. The shallow waters of the lagoon, if protected from pollution, can contribute to the enhancement of marine and aquatic life. At present, the area is visually unattractive, and imaginative design solutions are needed to enhance visual qualities and amenity. A long range goal should be removal of the PG&E transmission lines and towers. In the interim, development should be designed to mitigate the adverse impact of these towers and transmission lines. 533

Implementation:

Prepare a development plan for the lagoon and its borders as part of Bayside Park. Institute, or continue, a program to monitor water quality in the lagoon to identify any measures needed to correct and prevent pollution. Develop an urban design scheme that would create an open space continuum from the buildings on the frontage road south of the Bayshore Freeway to future structures in the Anza Pacific lands north of the Inner Lagoon. 534

Outer Lagoon and Adjacent Park (16)

This area comprises part of the state lands under lease to the Anza Pacific Corporation. Aside from sites designated for restaurants, this area, including the Lagoon, should be kept in open space use. 535

Implementation:

Apply open space zoning or designate, in a specific development plan, lands to be kept open or essentially open around the Lagoon. 536

Anza Pacific, Adjacent Inner Lagoon (17)

This area, or its equivalent, privately owned, should be kept essentially open to provide a continuum of open space from the inner lagoon to the Bay. It should be part of a broad corridor between the inner and outer lagoons and adjacent park lands. 537

Implementation:

Zone this portion, or its equivalent, of the Anza Pacific holdings for open space use, or designate it for open space use in a specific development plan for the Anza Pacific holdings. This is primarily a matter of building location within an overall development plan. 538

Shoreline Lands (east) (19)

These open space lands along the shoreline are, in part, protected by public easements. The visual quality of the shoreline should be improved and a system of walks and bicycle paths developed for outdoor recreation and to provide public access to the Bay and the lagoons. 539

Implementation:

Formulate a comprehensive development plan for the shoreline area, highlighting pedestrian and bicycle uses. Most desirably this plan would be part of a comprehensive plan for the entire area north of Bayshore Freeway (as recommended in the Waterfront Element of the General Plan). In the interim, establish special shoreline zoning regulations to control use of the shoreline and adjacent lands; include requirement for building setbacks from the Bay. 540

Shoreline Lands (west) (20)

Although BCDC has jurisdiction 100 feet inland from the shoreline, much of the Shoreline Lands (west) have already been developed. Increased public use and enjoyment of the shoreline can only come about by having adequate public access points to the shoreline and along it and by insuring that the land uses are compatible with the aquatic environment. 541

Implementation:

Apply a shoreline zoning regulation along the band extending inward from the shoreline. Require public access in conjunction with all new development. The existing waterfront commercial zoning regulations should be revised to restrict uses allowed in this area to those requiring waterfront location or providing increased public access to the Bay. 542

City of San Francisco Watershed Lands (7)

Matching the waters of the Bay and the shoreline areas in importance to Burlingame is this magnificent natural preserve lying just west of the City. It serves three functions: health and safety by protecting the watershed through management control and by providing space for water storage; outdoor recreation by providing outstanding scenic views and opportunities for nature study, hiking and riding; resource protection by providing wildlife habitat and protecting soil and vegetative resources. 543

Implementation:

Maintain liaison with the City of San Francisco Water Department. Monitor actions of the San Francisco Public Utilities Commission related to policy or projects for the watershed lands. Request referral of all such matters to the City for information and review with particular attention to environmental impact reports. 544

Skyline Park (15)

This is a proposed new city park adjacent to Junipero Serra Freeway. Its primary open space function would be outdoor recreation. In addition to providing low intensity informal recreation opportunities for nearby residents, the area is an important part of the scenic corridor for Interstate 280. It is thus of regional as well as local importance. It also contributes to health and safety by decreasing noise impact from the freeway. Preservation of natural resources is a secondary function. 545

Implementation:

Obtain use of these lands through negotiations with the City and County of San Francisco 546

Mills Canyon Park (14)

This is a City owned park site. It is situated in a steep canyon and has some excellent native vegetation. Because 547

of its physical characteristics it should be retained as a natural preserve for limited low intensity, informal recreational activities including walking, nature study and other activities permitting enjoyment of the area. Points of access are presently very limited and additional access is needed.

Implementation:

Formulate a plan for protection and limited development of this site. Restrict activities in the park to those consistent with its character as a natural preserve. Acquire easements in several locations to provide more access from the west side of the park; also from Hayward Drive as recommended in paragraph 526. 548

Mills Canyon Hillside (8)

These two areas adjacent to the Mills Canyon Park site are comprised of the rear portions of private parcels of land which are used for single family residences. These hillside lands are still of much the same character as Mills Canyon Park and should be kept as open space to serve three functions: preservation of resources by maintaining vegetation and preventing erosion; health and safety by preventing construction on lands of questionable stability (identified as an area moderately susceptible to landslides by USGS); providing recreation by enhancing the visual quality of Mills Canyon Park. 549

Implementation:

Acquire conservation easements by gift or purchase covering the rear portion of parcels abutting on Mills Canyon Park. Where parcels are undeveloped, consider acquiring parcel in full fee to add to Mills Canyon Park. 550

Russell College

The site of this college includes substantial open space which is a valuable resource and should be retained. The existing open space is an adjunct to existing building and includes an extensive stand of live oaks and other vegetation which should be preserved. In addition to resource preservation, the site adds to the visual amenity of the local area and thus, even without public access, provides a form of recreation. 551

Implementation:

Advise San Mateo County of Burlingame's interest in retaining the open space qualities presently existing 552

on this site; prezone with regulations permitting the existing use to continue but limiting the extent of any expansion. Such pre-zoning should be done as a part of pre-zoning of other lands in the City's sphere of influence. Explore the possibility of entering into an agreement with Russell College to permit limited public use of the college grounds with particular attention to obtaining a pedestrian and bicycle path along Mills Creek as a link to Mills Canyon Park.

Creek Systems

Three of Burlingame's creeks are recommended for special protection for open space: El Portal Creek, Mills Creek and Easton Creek. Although the natural regimen of these creeks has been disturbed by development in their watersheds and by channeling and culverting in their lower reaches, they still have important functions to perform. These creeks and their branches are important to health and safety, visual amenity (recreation) and resource protection (habitat and vegetation). Mills Creek and Easton Creek also provide a greenway system of native trees and plants linking headwater canyons with other open spaces in the lower reaches. Maintaining the visual linkage is important. Pedestrian access in selected locations to link parks and school grounds would enhance the usefulness of these facilities to the public. Care would be needed to avoid infringing on privacy of homes located along the creeks. 553

Implementation:

Establish special zoning regulations to protect the creek channels and banks and the vegetation along the creeks. Study the feasibility of obtaining pedestrian links 1) along Mills Creek (northern branch) between the Burlingame Intermediate School and Davis Drive, and 2) along Mills creek through the Russell College to connect Mills Canyon Park to Hoover Avenue. To assist in protecting the streams, request that jurisdictions with control over upstream areas (San Mateo County, Hillsborough, San Mateo City, and Millbrae) submit to Burlingame, Environmental Impact Reports covering any projects in their portions of the watersheds of streams flowing through Burlingame. 554

Easton Creek and Canyon Drive Area (10)

This area is similar in character to the Mills Canyon Hillside (Area 8). It includes the rear portions of residential lots, many of which have been developed. 555

Because the area is heavily wooded with native vegetation, it is important for resource conservation. Preservation in the present state is also important to health and safety since these lands are steep and of questionable stability and of doubtful suitability for building construction (classed as "Moderately Susceptible to Landsliding" by USGS with some evidence of existing landslide deposits). If existing vegetation were removed, the lands would be subject to erosion and peak runoff and downstream siltation and damage would be increased. In addition to resource preservation and protection of health and safety, these wooded hillside lands, because of their scenic quality, provide a form of outdoor recreation.

Implementation:

In pre-zoning, establish appropriate open space and conservation regulation to protect this area. If necessary, acquire conservation easements to preserve its openness and natural character. 556

Hoover School and Canyon (11)

This area provides open space functions similar to Easton Creek and Canyon Drive area and should be retained in essentially its present condition. Because of topographic and geologic limitation it appears generally unsuitable for additional residential development. 557

Implementation:

Establish Conservation and Open Space zoning to inhibit infringement upon the open space character. Public acquisition is recommended to permit limited public use of lands in the canyon. Continue arrangements with the school district for recreational use of the Hoover School site. 558

Washington Park and High School (13)

This is a designed and structured area for organized activities. Although it is intensively used for both outdoor and indoor recreation, it has retained an open space character. The combined area provides a most important open space resource as a part of "downtown" Burlingame. Its importance will increase in the future if residential densities continue to increase. 559

Implementation:

Limit any further structural development through City policy and open space zoning. Continue arrangement 560

with the school district permitting public use of the school grounds. Give particular attention to maintaining the major trees and other plant materials on this site.

Eastmoor Road City Park (21)

This is an existing City park, small, but an important green area on California Drive. It is recommended that the park be expanded by acquiring adjacent lots when feasible as they come on the market. 561

Cuernavaca Park (23)

This is an existing neighborhood park. In addition, it provides an observation point for viewing the San Francisco Bay area. 562

Vest-Pocket Parks

Continue development of vest-pocket parks within the City to serve nearby residents where no other park space is near. 563

Implementation:

Initiate a comprehensive plan for a park scheme to determine the placement of vest-pocket parks. Acquire selected parcels in areas in need of parks. Design and build parks on these parcels in accordance with the needs and outstanding traits of the area. 564

Ray Park and Lincoln School (22)

This combined school and park site provides an important open space resource for this part of the City. Its location on Mills Creek with an extensive length of creekside vegetation enhances its open space qualities. Further building upon the school site should be restricted to preserve open space. 565

Benjamin Franklin/Burlingame Intermediate Schools (24)

This combined school site is an important open space for all of northern Burlingame. Its open qualities should be preserved. It could become a more important part of the open space system if a connecting link to Mills Canyon Park were developed along Mills Creek. 566

Other School Sites

In addition to the school sites discussed above and identified on the Plan Diagram, all school sites in the 567

City contribute some measure of open space. However, many of the sites are over-crowded with structures. The City should continue arrangements with the school district for the joint use of school yards and should review any proposed addition to buildings.

Implementation:

In order to review all planned changes upon the school sites, establish a public lands zoning district. In cooperation with the school district, create comprehensive designs for each school site and adjoining lands to improve usefulness for education and to better serve the general public. Acquire individual lots adjacent to school sites where prudently possible. 568

Institutional Lands

Some of the other institutions (both public and private) provide significant open space. In some cases, in addition to the primary function, it may be possible to provide for some open space activities in harmony with the primary use. Peninsula Hospital (Area 25 on the Plan Diagram) has the largest site of any institutional use in the City. Only a small portion of the site is occupied by buildings and the open space quality should be preserved and enhanced. This site is of particular importance because it can provide an "open space" contrast to the more highly developed commercial lands on the north side of El Camino Real. 569

Implementation:

To maintain the existing open space on the institutional sites, establish a special form of open space zoning. Where appropriate, acquire access rights for the people to open spaces and develop quiet recreational pursuits appropriate and supplemental to the particular institution. 570

Burlingame Plaza (26)

At present this open space is a poorly arranged, unattractive series of parking lots. The planting in the divider along El Camino Real is very inadequate. Although the entire center - buildings, use, and parking areas - needs re-evaluation leading to improvement in function and appearance, much can be done with the open space itself (parking areas). This space should be re-designed as an attractive plaza with appropriate and adequate landscaping within which automobile parking would be accommodated. A well designed plaza in this location would provide an attractive entrance to Burlingame. Ideally, this plaza and the open space areas on the Peninsula Hospital site should 571

be considered together with some unifying design elements. These open spaces would provide a marked contrast to the character of El Camino further north, a contrast to the intensively developed commercial property north of El Camino, and an introduction to Burlingame's residential areas.

Broadway Center

This shopping area needs more open spaces to provide amenity. When off-street parking is developed, the basic design should include adequate planting, walks and other landscape features to enhance their appearance.

572

Downtown

This area includes the business district and the civic buildings. An overall urban design scheme is needed to improve functional efficiency, visual quality and amenity in this area of concentrated activity. The street space, as indicated on the Plan Diagram, if properly handled can provide a unifying element and open space to contrast with buildings. Other significant open spaces in this area include the grounds at City Hall, the yards and courts around the post office and a number of parking lots. City Hall, the post office, and the old City Hall site are either well landscaped or at least relatively attractive. Although the grounds at the post office are visually attractive, they are not developed in a manner providing any other public use. Minor additions including benches and walks would increase the utility of this open space. Every effort should be made to provide maximum public use and enjoyment of the limited open space in this general area.

573

Courts and Plazas in Business Districts

Existing open spaces in the business districts should be retained to the fullest extent possible and their character enhanced through appropriate landscaping. Open parking lots should be treated as plazas and courts to provide visual enjoyment in addition to their primary function. Courts, plazas and usable roof space should be incorporated in new development to the fullest extent possible. Attractive walks and benches for "sitting out" should be included wherever feasible in areas open to public access.

574

Implementation:

Formulate urban design plans for each business district; identify City owned or controlled lands

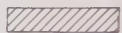
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for City improvement; encourage private owners to improve existing privately owned open spaces; review and revise zoning and other land use controls to require, or through incentives encourage, provision of attractive open space in connection with all new developments.

LEGEND

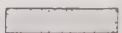
GENERAL OPEN SPACE

rights-of-way & adjacent "front yards"



OPEN SPACE LANDS

public --- existing or proposed



private -- control by zoning or easement



NOTE: numbers are keyed to description in Division II



OPEN SPACE ELEMENT — Plan Diagram

CITY OF BURLINGAME

GENERAL PLAN
STUDIES

ADOPTED JUNE 4, 1973 BY
RESOLUTION NO. 40-73

CONSERVATION ELEMENT
OF THE GENERAL PLAN
FOR THE CITY OF BURLINGAME

PLANNING COMMISSION

Everett K. Kindig, Chairman
Frank Cistulli
Malcolm M. Jacobs
Charles W. Mink
E. L. Norberg
Thomas W. Sine
Thomas C. Taylor

CITY COUNCIL

R. D. Martin, Mayor
Irving S. Amstrup
William J. Crosby
Dorothy Cusick
Victor A. Mangini

Approved by the Planning Commission on June 11, 1973

Adopted by City Council Resolution No. 58-73 on August 6, 1973

RESOLUTION NO. 58 -73

ADOPTING
THE CONSERVATION ELEMENT
OF THE BURLINGAME GENERAL PLAN

WHEREAS, California Government Code §65302(d) requires the preparation and adoption of a Conservation Element of the General Plan no later than June 30, 1973, for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources; and

WHEREAS, the Planning Commission of the City of Burlingame, after proceedings duly and regularly had as provided by law, did, by its Resolution No. 5-73 entitled, "Approving the Conservation Element of the Burlingame General Plan", adopted June 11, 1973, approve a Conservation Element and order it to be transmitted to the City Council for further proceedings as required by law; and

WHEREAS, the City Council, after consideration of the proposed Conservation Element, as approved by the Planning Commission, referred certain further changes and additions to the Planning Commission for consideration and for its written report as required by Government Code §65356, and the proposed changes and additions having been considered by the Planning Commission at its regular meeting on July 23, 1973, and a copy of its written report thereon having been filed with the City

Council; and

WHEREAS, this Council has held at least one public hearing to determine whether it should adopt said Conservation Element as an element of the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

WHEREAS, this Council, after such public hearing, at which evidence, both oral and documentary, was heard and received, and after due consideration of the evidence and of Resolution No. 5-73 of the Planning Commission approving said Conservation Element, and of the copy of the written report of the Planning Commission upon changes and additions proposed by the City Council, finds that said Conservation Element, in the form now before the Council, should be adopted.

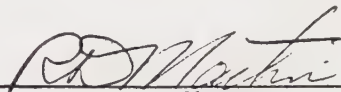
NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF BURLINGAME, that:

1. All notices required to be given and all hearings required to be held by Government Code Sections 65351 and 65355 have been given and held in the form and at the time and in the manner prescribed by law.

2. The proposed Conservation Element of the Burlingame General Plan entitled, "CONSERVATION ELEMENT OF THE GENERAL PLAN FOR THE CITY OF BURLINGAME" dated May 19, 1972, and revised June 12, 1973, consisting of 3 Divisions, namely, Division I --- Concepts and Depth of Definitions; Division II --- Objectives and Summary Recommendations; and Division III --- Program; together with Appendices I through IV, inclusive, as modified by the City

Council, is hereby adopted as and for the Conservation Element of the Burlingame General Plan.

3. The City Clerk be, and he is hereby, ordered to transmit a copy of the Conservation Element hereby adopted, together with a certified copy of this Resolution, to the Planning Commission of the County of San Mateo, State of California.

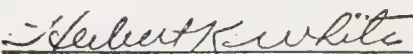

Mayor

I, HERBERT K. WHITE, City Clerk of the City of Burlingame, do hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 6th day of August, 1973, and adopted thereafter by the following vote:

AYES: COUNCILMEN: Amstrup, Cusick, Mangini, Martin

NOES: COUNCILMEN: None

ABSENT: COUNCILMEN: Crosby


City Clerk

SAN MATEO } ss.
HERBERT K. WHITE, City Clerk of the City of Burlingame, San Mateo County, California, and acting as Clerk of the City Council thereof, does hereby certify that the above and foregoing is a full, true and correct copy of

Resolution 58-73

entered in the minutes of said council.

In Witness Whereof, I have hereunto set my hand and the seal of said City this 7th day of August, 1973

HERBERT K. WHITE, City Clerk
By 

C O N T E N T S

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INTRODUCTION

The California State Planning Law now requires the general plan of each city and county to include a conservation element. Section 65302(d) of the Government Code defines the conservation element in these terms:

(d) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies which have developed, served, controlled or conserved water for any purpose for the county or city for which the plan is prepared. The conservation element may also cover:

- (1) The reclamation of land and waters.
- (2) Flood control.
- (3) Prevention and control of the pollution of streams and other waters.
- (4) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
- (5) Prevention, control, and correction of the erosion of soils, beaches, and shores.
- (6) Protection of watersheds.
- (7) The location, quantity and quality of the rock, sand and gravel resources.

Burlingame, in the main, is a "developed" community. However, there are important natural resources within and adjacent to its boundaries and the City needs to develop and implement programs that encompass the conservation of both the "built environment" and these natural resources.

The City gave general recognition to conservation needs in adopting the General Plan in 1969. The City General Plan now includes policy statements related to conservation. These are in three categories: (1) General Goals intended to reflect basic aims of the majority of citizens; (2) Community Development Goals identifying the general course of "development" needed in the City to satisfy the basic aims embodied in the General Goals; and (3) Implementing Objectives linking broad categories of action to the Community Development Goals.

The policy statements from the General Plan most directly related to conservation are cited below. These statements provide the

point of departure for the Conservation Element which will further define conservation policy and provide a framework for conservation activities needed to protect and enhance the quality of life in Burlingame.

General Goals

Educational, cultural, and aesthetic advancement.

Improvement of the physical environment, facilities, and services for living.

Community Development Goals

To maintain and improve the quality of the environment to preserve the public health and enhance the prospects for enjoyment by residents and visitors.

Implementing Objectives

Insure levels of air quality compatible with the preservation of public health, including prevention of irritation to the senses, interference with visibility, and damage to vegetation.

Maintain and improve the quality of water in San Francisco Bay and in the streams flowing through the City.

Maintain the pleasant appearance prevailing in most of the City's residential areas and improve the visual quality in areas of less satisfactory appearance.

Improve the visual quality of commercial and industrial areas with particular attention to the Central Business District, Broadway, and the industrial areas viewed from major highways.

Protect the citizens of the community against excessive noise.

In addition to these general policy statements, more specific policies and proposals for conservation in the waterfront area are included in the Waterfront Element (Section 3 of Part II of this General Plan).

In the Conservation Element, issues are discussed and suggestions for dealing with associated problems are advanced. This document is a beginning point in a program to provide solutions to the many environmental problems faced today. To assist the City in ongoing conservation education and action programs Appendix I provides a directory of public agency sources of technical information or advice; Appendix II is

a selection of reference material; Appendix III gives sources of data on the physical characteristics of the planning area; Appendix IV presents a summary description of sub-areas within the Burlingame Planning Area.

The Conservation Element as Part of the General Plan

The Conservation Element is intended to be supplementary to previously adopted General Plan elements.

The Conservation Element includes three divisions--Division I - Concepts and Definitions; Division II - Objectives and Principles; Division III - Program. The Conservation Element, when adopted, will become Section 6 of Part II of the General Plan. Paragraphs are numbered in sequence to assist in referencing specific portions of this element. This numbering system is consistent with that used in previously adopted portions of the General Plan.

6. CONSERVATION ELEMENT

DIVISION I - CONCEPTS AND DEFINITIONS

Conservation in Burlingame is concerned not only with the natural environment (where the forces of nature and the natural processes are dominant) but also with the built environment (areas where nature is modified by man through design and construction for visual and functional effects to serve and please human users). The built environment is characterized by buildings and other structures and the sites upon which they sit; streets; parking areas, gardens and parks (other than natural preserves). This element, therefore, defines conservation policy and provides a programmatic framework for the conservation and utilization of natural resources, and for protecting and enhancing the aesthetic qualities and usefulness of the built environment. If the qualities of the natural and built areas of Burlingame are to be maintained or enhanced, citizens must be aware of the existing problems and issues both of local and regional nature. Many urban environmental problems in Burlingame can be successfully dealt with locally, but some broader environmental concerns, e.g. air, noise, and water pollution, require interjurisdictional cooperation on an area-wide or regional level. In addition, some concerns may require cooperative efforts between the City and public and private agencies at state or even national levels.

600

Conservation in Burlingame has three basic aspects. First 601
is an understanding of the natural site on which the City
has been built--the hillsides, canyons, streams, and the
marshes and the Bay--all of which have been altered through
the years as roads and railways were laid out, woodlands
cleared, marshes and Bay filled, and houses, stores and
factories built to form the City as it now is.

Second is a respect for the City itself as a functioning 602
whole--the homes, streets, market places and meeting places,
businesses and industries that are the setting for human
activities.

And third, is an awareness of the dynamic impact of natural 603
forces that continue to affect the City--the rains, wind,
erosion and floodings, and tides and currents in the Bay;
the growth (and sometimes decline) of street trees, gardens,
park landscaping; the impact on wildlife habitat, of changes
in woods, backyards, tidelands, the Bay and its shores.

Conservation Ethic

Not only in Burlingame but throughout most other urban areas, 604
conservation begins with awareness and understanding. Man
is involved in the ecological continuum (natural and man-made)
of which he is a part. Apathy (or perhaps a sense of helplessness)
in the face of environmental degradation is showing
signs of dissolving, and is being replaced with a growing
ecological consciousness. A part of this is an awareness
that man not only must have a sound natural environment, but
also a sheltering city which meets his cultural needs. A
conservation "ethic," then, is concerned with both. It derives
from a special feeling for the earth, the ecosystem, and all
living things. It includes recognition of the value and role
of our built environment and the useful things within it.
The City should foster the conservation ethic through communication,
cooperation, education, and action.

Basis for Systematic Approach

The objectives and principles set forth in Division II, 605
following, provide essential general policy for a systematic
approach to conservation of natural resources and city values
in Burlingame.

DIVISION II - OBJECTIVES AND SUMMARY RECOMMENDATIONS

Objectives

- 606
- (a) To initiate, develop, and implement programs for
the conservation of natural resources giving
particular attention to critical resource conditions.

- (b) To prevent or eliminate damage to the environment and stimulate the health and welfare of the citizens of Burlingame.
- (c) To restore, where found to be feasible, natural features of vegetative cover, streams, marsh and bay where areas have been unduly disturbed by man.
- (d) To initiate, develop, and implement programs for the conservation of the built environment.
- (e) To foster public educational programs on local conservation needs.
- (f) To participate in regional conservation programs of direct concern to the City.
- (g) To promote economic growth which is consistent with an improvement in the quality of the environment.

Summary Recommendations

607

- (a) The City should act to protect valuable vegetative cover and encourage planting additional vegetation, giving preference to indigenous materials.
- (b) The City should initiate a study by the Planning Commission of the remaining natural areas to determine the effect of development on or near these areas.
- (c) Because projects being developed outside the corporate limits can adversely affect the City environment, Burlingame should monitor all major developments through the EIR process and other procedures.
- (d) The City should protect the creeks flowing through private and public lands by regulation and acquisition of conservation easements where found to be necessary.
- (e) The City should acquire development rights where found to be necessary to protect areas that are of outstanding value in their natural condition.
- (f) To protect existing urban areas and structures from deterioration, Burlingame should insure that private places are properly maintained.
- (g) In order to develop a stronger conservation awareness in the people of Burlingame, the City should help to develop conservation education programs in the schools and in the community.

- (h) To develop an exchange of information, the City should maintain communication with conservation groups and conservation agencies in areas of direct concern to the City.

DIVISION III - PROGRAM

The comprehensive conservation program deals with the two basic environments found within Burlingame--the built and the natural. Although the state law identifies conservation with the natural resources, it is necessary that the City consider, in addition, the conservation of some particular sections of the City where remedial actions are needed.

608

For this program, natural resources as defined in the Government Code (Section 65302(d)) are grouped in the following categories:

609

- (a) water
- (b) vegetation
- (c) soils and geology
- (d) wildlife
- (e) air

For the "built" environment, areas of the City are treated in three broad categories:

610

- (a) Stable urban areas, in which relatively little adverse change is anticipated.
- (b) Special urban conservation areas, requiring remedial action.
- (c) Areas of change where redevelopment and new development could adversely affect the natural resources.

Carrying out the conservation program requires a wide range of public and private actions, including:

611

- (a) government regulation
- (b) acquisition in fee or lesser interest
- (c) technical advice
- (d) education
- (e) incentives
- (f) remedial work programs, public and private

Charts I and II identify the interrelation of the components of the conservation program. These charts provide a framework for review and evaluation of the public and private actions needed to achieve conservation objectives. Such review by City staff, officials and citizens can become an important part of an on-going conservation action program. (See Charts on following pages.)

612

CHART I

CONSERVATION FRAMEWORK

Programs and Actions for the Conservation of the Natural Resources
(A Format for Evaluation)

Conservation Programs and Actions	Natural Resource Categories				
	Water	Vege- tation	Soils & Geo- logy	Wild- life	Air
<u>Government Regulations</u>					
1. Zoning					
2. Subdivision					
3. EIR's					
4. Building Code					
5. Parking					
6. Fire Code					
7. Sign					
8. Design Review					
9. Maintenance Code					
<u>Acquisition of Endangered Areas</u>					
1. Fee					
2. Easement					
3. Gift or Purchase					
<u>Technical Advice</u>					
1. Public Information Service					
2. Private Groups & Individuals					
<u>Education</u>					
1. City Staff and Officials					
2. Public Schools					
3. Private Groups & Individuals					
<u>Incentives</u>					
1. Financial Relief					
2. Shared Responsibilities					
3. Regulation Modification					
<u>Remedial Work Programs</u>					

CHART II

C O N S E R V A T I O N F R A M E W O R K

Programs and Actions for the Conservation of the Built Environment
(A Format for Evaluation)

Conservation Programs and Actions	Urban Areas		
	Stable	Special Conser- vation	Transitional Areas Affect- ing Natural Resources
<u>Government Regulations</u> 1. Zoning 2. Subdivision 3. EIR's 4. Building Code 5. Parking 6. Fire Code 7. Sign 8. Design Review 9. Maintenance Code <u>Acquisition of Endangered Areas</u> 1. Fee 2. Easement 3. Gift or Purchase <u>Technical Advice</u> 1. Public Information Service 2. Private Groups & Individuals <u>Education</u> 1. City Staff and Officials 2. Public Schools 3. Private Groups & Individuals <u>Incentives</u> 1. Financial Relief 2. Shared Responsibilities 3. Regulation Modification <u>Remedial Work Programs</u>			

Conservation Program Action Components

Government Regulation. The natural resources important to Burlingame can be conserved in large part through adequate control of new and existing development by suitable regulation--applied by the City under its powers to enact laws which are in the public interest and which are directly related to the health, safety, and general welfare of the community. Such regulation can be in the form of zoning; architectural and site plan review; subdivision regulation; grading and site development regulations; and other measures to protect creeks and bay, require careful siting of development around the canyons, provide control over use of natural hazard areas, other unstable areas and flood plains. The zoning ordinance can include height, bulk, and usable open space regulations for conservation of the "built" environment. 613

Action: Review existing regulations in relation to conservation needs and prepare revised or new regulations as required. 614

Acquisition. There are cases where private development and use will not be compatible with resource conservation nor will regulation be adequate for achieving conservation objectives. In these situations public acquisition will be needed. This can be either full fee title, or acquisition of easement or other limited rights as necessary for the purpose to be secured. The rights acquired should be consistent with the conservation purpose. Acquisition can be by gift, dedication required as a condition of a permit, negotiated purchase, or purchase under eminent domain. 615

Action: Prepare acquisition program based on Open Space Element and other relevant information. 616

Technical Advice. Additional technical information and advice on natural processes is needed for an on-going conservation program, and should be so catalogued and organized that it can be made available and useful, not only to City staff and officials, but to the public as well. Information on services available and sources of professional advice including county, state and federal agencies, professional societies, conservation groups and appropriate local professionals (e.g. landscape architects, architects, geologists, biologists, hydrologists) should be made available at the Burlingame City Library and through public schools within the City, and at the high schools and the community colleges. Through the Burlingame City Library the Bay Area Reference Services can provide access to information sources not available locally. 617

Education. The primary role of the City in conservation education is to provide information about its own programs and its background studies of the Burlingame setting. This information should be made available through the Burlingame library system as well as through the City Planning Department. 618

Although new conservation related curricula are now being developed at every grade level in the school systems, public and private, high school adult education and community colleges, the need for more specific information on local ecosystems warrant setting up effective channels of information. 619

Important participants in community actions to further the conservation goals and encourage private initiative and cooperation are the civic and conservation organizations concerned with the quality of the City environment. 620

Improved channels of communication will encourage citizen participation. The City, too, could benefit from an exchange of information in order to take advantage of the valuable body of local information being developed by these organizations--on City history, archeology, historic buildings and sites, birds and other wildlife, horticulture and the like. 621

Incentives. For effective conservation of natural resources and the "built" environment a program of public incentives may be needed. Tax relief or other financial incentives could be used for the conservation of urban areas, specific buildings and natural areas. Although such incentives would require state and federal legislation, the City could adopt policy in favor of such incentives. Other incentives might be in the form of allowing modification of regulations conditioned on specific conservation measures to be taken by the property owner or developer, or agreements by owners on maintenance of historic structures or sites. 622

Remedial Work Programs. Remedial work programs directed at specific conservation problem areas can prevent further irreversible damage to the environment. The most urgent of such programs are rehabilitation of the creek systems; measures to halt and repair erosion in the hills area; and corrective work (together with more stringent regulations on development and conversion projects) to insure compatible development along the bay shore. 623

PROGRAM ITEMS

The program is organized under two major headings, "Natural Environment" and "Built Environment" with sub-headings for the natural resource and urban conservation categories previously identified. 624

Natural Environment

In this element of the plan natural resources are treated under the broad categories of water, vegetation, soils and geology, wildlife, and air. And, in turn, each category is considered in terms of conservation, development and utilization. 625

The many physical impacts of our urban technological society interact to create conditions detrimental to the natural environment. Chart I, for reviewing and evaluating natural resource problems, is intended to help identify specific harmful frictions at the urban-natural resource interface and suggest at the same time possible avenues of corrective action. 626

WATER

The Bay

Issues: The Bay and its shores comprise a resource of the greatest importance to the region, state and nation. Conservation of this magnificent resource presents a wide range of issues. The status of tide and submerged lands granted to private owners in the late 1800's by the State presents a major problem. A portion of the tide and submerged lands within the corporate limits of Burlingame is held by the City of San Francisco as a part of the airport property. In addition, 530 acres of tide and submerged lands are claimed by Ideal Cement Company, the largest single expanse of vacant "land" in Burlingame (title to this area is now in litigation). These problems and issues and others related to the Bay and its shores are described in the report "Burlingame 1968: background for the general plan." 627

The City has shared jurisdiction with the Bay Conservation and Development Commission (BCDC), other state agencies and federal agencies including the Corps of Engineers. Conservation of the waters of the Bay is very much an interjurisdictional matter. The City has zoning authority and can exercise control over uses and structures in addition to control by BCDC. 628

Program: Continue to exercise zoning control through T-P zoning. 629

- Review the T-P regulations and impose new requirements if needed.
- Initiate a program of continuing education.
- Continue to cooperate with regional, state and federal agencies on matters of mutual interest.

- Formulate a specific plan for this portion of the Bay and its shores working with BCDC to insure a mutually acceptable plan.

Creek System

Issues: Seven creeks flow through the City to the Bay. Of the total length of the creeks, only a small portion remains in a state approximating natural conditions. The remaining length has either been rechanneled, concreted, or under-grounded or otherwise modified. A large portion is privately owned. Above Burlingame and within the City of Hillsborough and unincorporated Burlingame Hills are canyons from which originate Sanchez Creek and Burlingame Creek. Terrace and Ralston Creeks have their headwaters in the same vicinity. "Continued development of areas within the City and in Hillsborough will tend to increase the flooding potential unless corrective measures are undertaken."* South of Hoover School and situated in Hillsborough is a reservoir formed by an earth fill dam on a branch of Sanchez Creek. The operation of this reservoir is of concern to Burlingame since it affects downstream flow. Although there have been no reports of problems, structural safety of the dam is a matter of interest.

Program: Retain present natural sections of the creek system in a natural condition.

- Inform the public of the part the creeks play in the ecosystem to instill an understanding (therefore, respect) of the creek systems.
- Study soil stability, vegetation and bank conditions along the creeks and regulate appropriately.
- Improper development along the headwaters of these creeks can cause problems in Burlingame from excessive run-off, erosion, and siltation; therefore, to monitor upstream conditions protect downstream reaches.
- Request, from any agency with jurisdiction in the headwaters of these creeks, environmental impact reports on any and all projects which could affect the streams.
- Review any inspection reports on the dam on Sanchez Creek and monitor any development that could cause excessive run-off into the impounding area.

* Paul L. Adamson and Harry N. Jenks, PRELIMINARY REPORT ON FLOOD CONTROL AND DRAINAGE FACILITIES, p.1.

Water Quality

Issues: Grading and building of structures such as walls and revetments, or removal of vegetation along creeks from steep lands can cause erosion and the siltation of the creeks and also of the Bay. Storm water run-off contributes to pollution because of "non-point" sources. Burlingame made a major advance in wastewater treatment through construction of a full secondary and partial tertiary treatment system completed in 1969. The Bay now receives discharge from Burlingame's wastewater treatment plant through a 50 foot outfall after full secondary and partial tertiary treatment. 632

Program: Restrict any further disturbances along the creeks. 633

- Extend a sewer outfall to the deep waters of the Bay, preferably through cooperative action with other jurisdictions, if federal grants are received.
- Prohibit any discharge into Bay waters from any manufacturing or retail enterprise without proper treatment of the discharge.
- Study feasibility of controlling pollution from storm drainage and other "non-point" sources.
- Cooperate with regional agencies with responsibility for maintaining water quality.

VEGETATION

Vegetative cover, in addition to contributing to the beauty of the area, helps to maintain the quality of watershed lands, aids in erosion control, and is an important element of the wildlife habitat. In addition, it helps maintain air quality through re-oxygenation, and reduces noise impact. 634

Issues: The tall eucalyptus (E. globulus) that line El Camino Real and border the railroad have long been a dominant feature of Burlingame landscape. But throughout much of the City other street trees and public plantings provide green canopies that shade sidewalks, act as wind breaks, and contribute to the public health and pleasure. 635

Program: Continue maintenance program and replacement program for street trees lost through aging and damage. 636

- Periodically review planting lists for street trees, and modify to more fully relate to conservation objectives.

Hillside Vegetation

Issues: The land around Mills Canyon was subdivided from 1951 to 1960, and only a few of the parcels remain undeveloped. Because of their large size, many parcels neighboring Mills Canyon Park are of the same wooded character as the Park. Other areas of like character with extensive native vegetation are the Easton Creek/Canyon Road area, and the Canyon above Hoover School. 637

Program: Maintain the character of the areas and protect the vegetation. 638

- Inform the people owning property, in these areas, of the importance of maintaining ground cover and native vegetation.

City Parks and School Grounds

Issues: Washington Park in the center of the City offers a green spot for the inhabitants. Other parks likewise contribute to health and amenity. The existing trees and shrubs are a habitat for birds, squirrels and other small animals. The High School site is devoid of significant vegetation as are most of the older elementary school sites. 639

Program: Carry on the program of good maintenance of vegetation on all City parks. 640

- Encourage a program of landscaping on the High School and other school sites using trees of suitable size and character.

WILDLIFE

Shell Fish

Issues: The waters of San Francisco Bay off Burlingame were known at one time for their abundance of edible shell fish which supported a large fishery. Pollution of the Bay continuing over many years all but destroyed this valuable resource. However, wastewater treatment has improved in recent years and there are indications that there has been a resurgence of some species of marine life. 641

Program: (See program under Water Quality heading) 642

Shore Birds

Issues: The bayshore is the habitat for shore birds attracted there because of other aquatic life and vegetation. Disturbances to their food supply, in the form of water pollution and destruction of mudflats, have diminished the bird population of the area. Water fowl are an integral part of the ecological system. They also add interest and visual enjoyment. 643

Program: Maintain an appropriate environment for this wildlife by providing a sanctuary along the bayshore. Mudflats, marshland, and clean water are essential ingredients of this environment. 644

- Regulate development and the discharge of pollutants along the bayshore.

Hillside Wildlife

Issues: The Mills Canyon area is the habitat for rabbits, squirrels, quail and other birds, insects, and an occasional deer. The same holds true of other wooded or brush covered hillside areas large enough to support and protect such wildlife. 645

Program: Protect the quantity of vegetation on the hillside by regulating development on adjoining lots. 646

- Inform residents of the relationship between vegetation and wildlife.
- Encourage the planting and maintaining of vegetative types that improve the wildlife habitat.

SOILS AND GEOLOGY

Erosion

Issues: Some of the most frequent causes are grading, road cuts, destruction of vegetative cover and accelerated rainwater run-off from structures and paved areas. Erosion results in loss of valuable top soil, and also in subsequent pollution and siltation of creeks and Bay. 647

Program: Identify and correct erosion problems on City-owned lands. 648

- Develop erosion control programs and incorporate in regulations.
- Inform the public of the causes and effects of erosion and suitable corrective measures.
- Regulate new development to reduce erosion problems.

Seismic Conditions and Geologic Hazards

(Problems related to landslide, mudslide, unconsolidated fill, and seismic conditions will be dealt with in the Seismic Safety Element.) 649

AIR

Air Quality

Issues: Although maintaining air quality is primarily a regional and state matter, there are local sources and practices not presently regulated. Vegetation in the City regenerates the air supplies with oxygen. 650

Program: Support agencies working for air quality. 651

- Encourage the maintaining or increasing of the vegetative supply on private lands. Insure that all public lands are well planted wherever possible.
- Encourage use of public transit as an alternative to the private auto.
- Support programs to reduce wasteful use of energy sources contributing to air pollution.

Built Environment (see Diagram following Appendix IV for areas identified) 652

The concern for the built environment focuses particularly on two kinds of areas in transition. First are those built up sections of the City where changes are occurring accompanied by signs of decline or increased intensity of use. These are older areas where many structures are obsolescent or deteriorating and where residents have grown older and the structures no longer fit the particular needs of the present occupants. (These are identified as "Special Urban Conservation Areas.") Second are the areas, now largely vacant or occupied by low intensity uses, where added development is imminent and of such potential magnitude and intensity that changes could significantly affect natural resources. (These are identified as "Areas of Change.") In addition are the areas in good physical condition where reasonably adequate conservation measures are now being taken by property owners and the City. (These are identified as "Stable Urban Areas.") 653

Stable Urban Areas

Areas: 1, 2, 7, 8, 10, 12, 13, 17, 20, 21, 22, 26-38. 654

Characteristics: These are areas where the quality of development is good, and the level of maintenance is adequate. There is either a single type of land use or a compatible mixture of uses. The scale of development is human and intimate. In the main, urban services are adequate and community facilities near at hand. 655

Program: Maintain present land use pattern.

656

- Insure that urban services meet the demands.
- Develop a maintenance code for all private properties to eliminate fire hazards and to improve appearance and public safety.
- Determine the capacity of the urban services and the probable maximum use as set by zoning.
- Determine possible future problems and identify actions needed to ameliorate contributing conditions.
- Monitor the needs of the areas and develop programs accordingly.

Special Urban Conservation Areas

Areas of mixed residential use: 11, 14, 18, 23, 24.

657

Characteristics: These areas of mixed residential use, needing some remedial action, have over the years suffered from age or change including illegal conversions. Some are exposed to adverse conditions nearby. In some of these neighborhoods buildings are deteriorating from insufficient maintenance or have buildings and infrastructures too old to be serviceable. In other sections, the relationships to the rest of the City are poor, or community facilities are not conveniently accessible, or the area suffers from the impact of some adverse external influences.

658

Program: Determine more completely the nature and causes of changes taking place.

659

- Determine compatibility between the direction of change and existing zoning and the general plan.
- Determine the extent of structural deterioration and conversions.
- Develop programs to arrest deterioration.
- For areas in transition monitor the needs of the areas and develop programs accordingly.
- Insure that urban services meet the demands.
- Study the impact of the commercial intrusions and implement policy that reflects the recommendations of the study.
- Develop a maintenance code for all private properties, to eliminate fire hazards and to improve appearance and public safety.

Area of mixed residential/commercial use: 16.	660
Characteristics: This was formerly an area of single-family homes, but now land uses are mixed with new apartments and commercial buildings. The area lacks parks and recreation areas.	661
Program: Develop a comprehensive design for the area.	662
- Develop architectural guidelines. - Determine the present range of rents and develop a program of providing a diversity of rents. - Integrate residential with highly-serviceable commercial enterprises.	
Area of residential/office use: 19.	663
Characteristics: This is an area of mixed residential uses now changing to higher density apartments and office buildings. It contains the new City Hall and library. The maintenance of properties is good but it is an area undergoing marked changes in intensity of use.	664
Program: Develop a comprehensive design.	665
- Zone according to the comprehensive design. - Develop architectural guidelines and review and advise on building proposals. - Explore the possibility of introducing other civic facilities in the area.	
Areas of commercial use: 15, 25.	666
Characteristics: These commercial areas lack unity in design although a humane scale still exists in some portions. Some structures are old and obsolescent. Traffic congestion and parking are problems and expansion of parking would be difficult and only possible by intruding into nearby residential areas.	667
Program: Determine the extent of transition, its direction, and its possible influence on other areas.	668
- Develop a comprehensive urban design. - Develop architectural guidelines. - Determine the compatibility between the commercial enterprises and the few residential parcels.	

Area of industrial use: 9. 669

Characteristics: This industrial area suffers from poor layout and lot pattern. Consequently traffic circulation is difficult. Some vacant land remains. It is an area of warehouse use. 670

Program: Develop a maintenance code. 671

- Develop a comprehensive design including improved traffic circulation.
- Negotiate for resubdivision of the remaining vacant land to alleviate the chaotic lot patterns.
- Develop regulations to maintain some of the open space.
- Determine the amount of structural deterioration.
- Study the capacity of urban services, determine areas of deficiency, and alleviate.
- Develop architectural guidelines.

Areas of Change Affecting Natural Resources

Areas include: developed and undeveloped properties adjacent to the Bay. Areas 1, 2, 3, 4, 5, 6. 672

Characteristics: This large expanse of land to the northeast of Bayshore freeway was created by one of the last extensive land fills in the South Bay. The major portion is in private ownerships, in part already developed, and the remaining open land is planned for extensive development in the future. This area includes also the waste water treatment plant and the solid waste disposal site to be incorporated in the City's proposed aquatic park. 673

This fill area lacks a comprehensive plan and guidelines. There is severely limited capacity for traffic into the area. Some of the development that has already occurred, though well maintained, is not easily compatible with the atmosphere of the Bay. 674

Program: Develop comprehensive designs giving special attention to the natural resources. 675

- Institute stronger zoning regulations to protect the natural resources.

APPENDIX I - DIRECTORY OF AGENCIES AND CONSERVATION
ORGANIZATIONS WHICH CAN SUPPLY ENVIRONMENTAL
PROTECTION INFORMATION (April 1973)

The public agencies and conservation organizations listed below are important information resources. Many supply literature, have established conservation programs and serve as speakers bureaus. In addition, many public agencies provide direct technical assistance in dealing with specific problems.

Public Agencies

Association of Bay Area Governments
(ABAG)

1. Technical Assistance

Claremont Hotel
Berkeley, 94705
841-9730

Bay Area Air Pollution Control District

1. Law Enforcement
2. Technical Assistance

939 Ellis Street
San Francisco
771-6000

State of California

A. Emergency Services Office

1. Planning Research Center

617 Veterans Boulevard
Redwood City, 94063
365-3313

2. Region 2 Office

3304 Joaquin Miller Rd.
Oakland
531-2233

B. Dept. of Fish and Game

1. Technical Assistance
2. Law Enforcement

411 Burgess Drive
Menlo Park, 94025
326-0324
326-8063

3. Forestry Division

- Ranger Headquarters

6059 Highway 9
Felton, 95018
(408) 335-5354

- Sky Londa Fire Station

Fire calls only

Business calls

851-1415
851-1860

C. Structural Pest Control Board

30 Van Ness
San Francisco
557-0966

D. State Council on Intergovernmental
Relations (CIR)

1400 Tenth Street, #121
Sacramento, 95814
(916) 445-7866

Metropolitan Transportation Commission
(MTC)

1. Technical Assistance

Hotel Claremont
Berkeley, 94705
849-3223

San Francisco Bay Conservation and
Development Commission (BCDC)

1. Technical Assistance
2. Law Enforcement

30 Van Ness
San Francisco
557-3686

San Francisco Bay Regional Water Quality
Control Board

1. Technical Assistance
2. Law Enforcement

364 - 14th Street
Oakland, 94612
464-1255

San Mateo County

A. Agricultural Commissioner

728 Heller
Redwood City
364-5600

B. Civil Defense Operational Office

Hall of Justice
Redwood City
364-5600

C. Dept. of Health and Welfare

1. Health Education
2. Environmental Health Sanitation

225 - 37th Avenue
San Mateo
573-2222
573-2398
573-2301

D. Parks and Recreation Department

County Office Building
Redwood City
364-5600

E. Planning Commission

364-5600

F. Regional Planning Committee

364-5600

United States Government

- A. Department of Agriculture
1. Agricultural Stabilization
& Conservation
 2. Soil Conservation Service

508 Main Street
Half Moon Bay
726-4660
726-4660

B. Dept. of Commerce

1. National Oceanic and Atmospheric
Administration
- Seismological Field Survey

390 Main Street
San Francisco
556-7768

2. Earth Sciences Laboratory	390 Main Street San Francisco 556-7710
3. National Weather Service	936-1212
C. Environmental Protection Agency For information regarding:	100 California San Francisco
1. Air Pollution	556-0216
2. Technical Assistance to State and Local Government	556-6266
3. Library - Publications	556-4527
4. Pesticides and Noise	556-1406
5. Public Affairs	556-6695
6. Solid Wastes	556-5010
7. Water Quality	556-5480
D. Dept. of Housing and Urban Development (HUD)	681 Market San Francisco, 94105 556-2238
E. Department of Interior	
1. Bureau of Outdoor Recreation	450 Golden Gate Ave. San Francisco 556-0182
2. Bureau of Indian Affairs	620 Central Ave. Alameda, 94501 273-7412
3. Geological Survey	345 Middlefield Road Menlo Park, 94025 323-8111
4. National Park Service	450 Golden Gate Ave. San Francisco 555-4122
5. National Marine Fisheries Service	556-7632
University of California Dept. of Forestry and Conservation	U.C. Berkeley 642-0376
<u>Conservation Organizations</u>	
National Audubon Society (Audubon Center - Golden Gate Audubon Society)	2642 Russell Avenue Berkeley 843-2222
National Audubon Society (Nature Center Planning Division)	950 Third Avenue New York, N. Y. 10022 (212) 832-3200

Bay Area Congress of Citizens	c/o Bay Area Council World Trade Center San Francisco 981-6405
California Coastal Alliance	307 Blakewood Way Woodside, 94062 851-7418
California Roadside Council	2636 Ocean Avenue San Francisco 681-6189
California Tomorrow	Monadnock Building 681 Market Street San Francisco 391-7544
California Wildlife Federation	
Committee for Green Foothills	1176 Emerson Palo Alto 328-5313
Conservation Co-ordinators Inc.	307 Blakewood Way Woodside, 94062 851-7418
Conservation Law Society	Mills Tower San Francisco 981-7800
Friends of the Earth	529 Commercial San Francisco 391-4270
League of Women Voters	
A. Central San Mateo County	155 South B Street San Mateo 342-5853/347-5141
B. North San Mateo County	423 Firecrest Avenue Pacifica, 94044 355-4408/359-3462
C. South San Mateo County	555 B. Ravenswood Ave. Menlo Park, 94025 325-5780/851-8175
Marin Ecology Center	8 El Paseo Mill Valley, 94941 383-6161

National Wildlife Health Foundation	450 Boyd Road Pleasant Hill, 94523 939-3456
Nature Conservancy	215 Market Street San Francisco 989-3056
People for Open Space	46 Kearny Street San Francisco 781-8729
San Francisco Ecology Center	13 Columbus Avenue San Francisco 391-6307
Save the Redwoods League	114 Sansome Street San Francisco 362-2352
Save San Francisco Bay Association	2015 Center Berkeley 849-3053
Sierra Club	
A. San Francisco Bay Chapter	220 Bush Street San Francisco 981-8634
B. Legal Defense Fund	311 California St. San Francisco 398-1411
C. Environmental Action Line	397-3229
D. Loma Prieta Chapter	327-8111
Trustees for Conservation	251 Kearny Street San Francisco 392-2838
Zero Population Growth	4080 Fabian Way Palo Alto 321-2100
California Historical Society	2090 Jackson Street San Francisco 567-1848
The National Trust for Historic Preservation in the United States	748 Jackson Place, N.W. Washington, D.C. 20006

San Francisco Tomorrow

36 Ord
San Francisco
861-4569

The Garden Club of America

598 Madison Avenue
New York, N. Y.

The Conservation Foundation

30 East 40th Street
New York, N. Y., 10016

The National Wildlife Federation

1412 - 16th Street, N.W.
Washington, D.C., 20036

APPENDIX II - SELECTED REFERENCE MATERIAL - CONSERVATION AND CONSERVATION PROGRAMS

From the Federal Government

U.S. Department of Health, Education, and Welfare

- Conservation Experiences for Children, Bulletin 1957, #16.
- Focus on Clean Water, Publication #1184, 1964.

U.S. Department of Agriculture

- Soil Conservation on New Building Sites (reprinted from "Soil Conservation," November 1966).
- The American Outdoors: Management for Beauty and Use. Forest Service - Miscellaneous Publication #1000, 1965.

From the State of California

- Conservation at the Local Level. State Dept. of Natural Resources - 1958 Conference on Conservation.
- Excerpts from a Report to the California State Board of Education by the Conservation Education Advisory Comm. - October 1969. Bureau of Elementary and Secondary Education, Department of Education.
- State Open Space and Resource Conservation Program for California. California Legislature Joint Comm. on Open Space Lands, April 1972.

From National and Local Organizations

- California Going, Going.... California Tomorrow, 1962.
- Life Styles and the Land. T. H. Watkins and R. R. Olmsted, California Historical Society.
- A Citizen's Guide to Clean Air. The Conservation Foundation, 1972.
- Preservation of Historic Districts by Architectural Control. J. Codman, American Society of Planning Officials, 1956.
- The Crisis in Open Land. American Institute of Park Executives, 1959.
- A Report on Principles and Guidelines for Historic Preservation in the United States. The National Trust for Historic Preservation, 1964.
- A Bibliography of Books, Maps, Pamphlets. San Mateo County Historical Association.
- CF Letter. The Conservation Foundation, 1717 Massachusetts Ave., N.W., Washington, D.C. 20036.
- Environmental Action Directory for Santa Clara County and the Bay Area. County of Santa Clara Planning Department, 1972.

- Institutions for Effective Management of the Environment.
National Academy of Sciences, National Academy of
Engineering, Washington, D.C., 1970.

National Audubon Society

- Manual of Outdoor Conservation Education, 1964.
- Wildlife Habitat Improvement.
- Trail Planning and Layout, 1971.
- A Nature Center for your Community, 1969.
- Planning a Nature Center, 1963.
- Manual of Outdoor Interpretation.
- Guidelines to Conservation Education Action.

Books and Papers

- City Design Through Conservation: Methods for the Evaluation
and Utilization of Aesthetic and Cultural Resources.
Stephen Jacobs and Barclay Jones, University of
California, Berkeley, Department of Architecture, 1960.
- Conservation of Historic and Cultural Resources. Ralph W.
Miner, American Society of Planning Officials, 1969.
PAS Report No. 244.
- The Politics of Pollution. J. Clarence Davies, III,
Pegasus, N.Y., 1970.
- Readings in Conservation Ecology. George W. Cop, Appleton-
Century-Crofts, 1969.
- Historic Preservation. F. Violich, J. Dykstra, J. Selvaggi,
City Planning Department, University of California, 1962.

Bibliographies

- *-Historic Preservation: A Bibliography. Gary L. Minges, 1969.
- *-Planning for Environmental Quality. George Hagwik, 1969.
- *-Air Pollution and Urban Planning, A Selective Annotated
Bibliography. William J. Van Nest, 1972.
- *-Landscape Amenity Assessment Bibliography. James W. Amy, 1972.
- *-Scenery Evaluation and Landscape Perception, A Bibliography.
John Marsh, 1972.
- Environment and the Community: An Annotated Bibliography. U.S.
Department of Housing and Urban Development, April 1971.
- Information on Environmental Problems: A Bibliography of
Available Materials for Students and Teachers. Open
Lands Project, 53 W. Jackson Blvd., Chicago.

* Available from:
Council of Planning Librarians
Exchange of Bibliographies
P. O. Box 229
Monticello, Illinois 61856

APPENDIX III -- SOURCES OF DATA ON THE PHYSICAL CHARACTERISTICS OF THE PLANNING AREA

PHYSICAL SETTING - GENERAL CHARACTERISTICS

1. Topographic Maps, United States Geological Survey 7.5 minute series, 1:24,000:

 San Mateo Quadrangle
 Montara Mountain Quadrangle
 San Francisco South Quadrangle
 Hunters Point Quadrangle
2. Aerial Photos of the Burlingame Area, Prepared as part of the 1970 Cooperative Mapping Program of San Mateo County, Towill, Inc., San Francisco, California, 1970.
3. The Physical Setting of San Mateo County, San Mateo County Planning Department, May 1968.
4. Report and General Soil Map, San Mateo County, Wesley C. Lindsey, U.S. Department of Agriculture, Soil Conservation Service, March 1970.
5. Preliminary Geologic Map of San Mateo County, California, U.S.G.S. - H.U.D. Basic Data Contribution #41, compiled by Earl E. Barbb and Earl H. Pampeyan, 1970.
6. San Mateo County Forest Resources Study, San Mateo County Planning Commission, March 1971.
7. Burlingame 1968: background for the general plan, William Spangle & Associates.

LAND STABILITY

1. Landslide and Slope Stability Maps for San Mateo County, United States Geological Survey, 1972.
2. Preliminary Map of Landslide Deposits in San Mateo County, California, Earl E. Barbb and Earl H. Pampeyan, 1972, Basic Data Contribution #42.
3. Landslide Susceptibility in San Mateo County, California, Earl E. Barbb, Earl H. Pampeyan, and Manuel G. Bonilla, 1972, Basic Data Contribution #43.
4. Active Faults, Probable Active Faults, and Associated Fracture Zones, San Mateo County, California, Robert D. Brown, Jr., 1972, Basic Data Contribution #44.

RELATED PLANS

1. Parks and Open Space, a Program for San Mateo County,
Parks and Open Space Committee of the Regional Planning
Committee of San Mateo County, June 1968.
2. Proposed Plan for Skyline Scenic Route, San Mateo County
Planning Commission, 1965.

APPENDIX IV - SUB-AREA DESCRIPTIONS*

To focus more directly on problems and indicators of change, the City has been divided into sub-areas, each of which has a somewhat different combination of conditions. These sub-areas are described below. (See Map of Sub-Areas at end of this Appendix for sub-area boundaries.)

AREA 1

Portion of 2,400 acres of tide and submerged airport lands owned by the City and County of San Francisco.

Impact will be caused by recently approved doubling of airport capacity and new trestle and an approach system for Runway 28R.

AREA 2

530 acres of tide and submerged lands owned by Ideal Cement Company, the largest single ownership of vacant land in Burlingame.

Was included in Westbay Community Associates proposal.

Any development of this parcel would have a major effect on Burlingame and particularly the surrounding waterfront and submerged properties; however, ownership of the area is now under litigation.

State of California acquisition of the outer lagoon in area three may make state ownership more likely.

AREA 3

115 acres of land being filled for commercial use by Anza Pacific Corporation, and representing an area of greatest change within the City of Burlingame. The types of uses and external appearances will have major impact on surrounding areas. This area presents great opportunities and challenges to the City and the developer. The character and quality of development is of critical importance to the City. The agreement concluded between Anza Pacific Corporation and state lands commission in July of 1972 resulted in 46 acres being allocated to state ownership in the north central portion. This area will include a tidal lagoon surrounded by recreational public uses. The state property along the northerly shoreline is being leased by Anza Pacific Corporation for uses permitted in the agreement. Anza Pacific has clear

* Basic information drawn from BURLINGAME 1968, BACKGROUND FOR THE GENERAL PLAN and updated through consultation with the City Planner in April 1973.

title to 79 acres of land which is available for development. The M-1 District was reclassified C-4 and it is now available for development as an office park.

The first office structure, a five-story building with 60,000 square feet of floor space is under construction at the easterly end at 433 Airport Boulevard. A park-and-fly establishment occupies the southerly side of Airport Boulevard as an interim use. The westerly end of the area is defined by the City park site still being used as a solid waste disposal site.

A constraint for development is the limited access by a two-lane road along the north side of Bayside Park and through area four (4). Further constraints are the interchange design and capacity and the capacity of Bayshore Freeway.

AREA 4

Filled land on which Anza Airport Park and drive-in theater are located.

Development to date gives indication of a character of development along the waterfront which will not recur by reason of the present rezoning from M-1 to C-4. Views will be significantly affected with the addition of two more drive-in theater screens.

Access is a major problem in this and other areas north and east of the freeway.

Although some present uses appear to be temporary in character, they can adversely affect future use and development. This area appears to be ripe for development in 15 years time.

AREA 5

110 acres of land owned by the City of Burlingame to be used as a waterfront park.

Major opportunity for creating attractive and useful environment along Bayshore and waterfront development areas. Ball fields have been completed at Bayside Park and will be placed in service this year (1973).

The Sheraton Inn Hotel with 316 rooms, 10 stories in height near the Broadway interchange, will occupy the only privately owned land in area five (5).

With the exception of the progressing development of Bayside Park, the City waste disposal area, waste water treatment plant and natural inner lagoon show no change or aesthetic improvement. Bike paths along the north side of the inner lagoon and a bridge over Bayshore Highway are under consideration.

AREA 6

1.3 miles of shoreline in private ownership and adjacent properties are now zoned waterfront-commercial and are subject to review and permit.

Restaurants, motels, office buildings, car rentals, service stations, are located along the shoreline. Stronger City policy and guidelines are needed in this area to control development in the C-4 District.

Application for a 16 story office building stimulated legislative concern for height, bulk and coverage requirements.

AREA 7

Area now suffers through lack of public transportation and poor access. It is dependent on the vastly inadequate Broadway-Bayshore Freeway interchange.

The East Millsdale Industrial Park is changing rapidly from an industrial area to an area with office buildings, particularly adjacent to Bayshore Highway. All recent construction has been two- and three-story office buildings.

Buildings with warehouse uses become economically less feasible and provide higher returns to owners if converted to office use.

AREA 8

Millsdale Industrial Park is largely developed, but a gradual infilling of the few vacant lots is occurring.

The quality is good but needs to be sustained.

Commercial recreational uses are permitted.

AREA 9

The quality of development is substantially below that of Millsdale Industrial Park which is partly due to the inefficient street and lot pattern.

This is an area of small lots unimproved for industrial and wholesale operations. Office warehouse construction continues in this area.

Substantial vacant land remains.

Problem is to improve and enhance the quality of this area and prevent deterioration.

Circulation pattern and traffic flow need improvement.

A street connection between North Carolan Avenue and Rollins Road will permit improvement of the vacant land along the east side of Mills Creek.

Service uses are subject to special permit procedures by Planning Commission.

AREA 10

An area of mixed uses.

The Northpark apartment complex has been completed.

There is a highly successful Velvet Turtle restaurant.

Important as a major entrance to Burlingame.

The block between Cadillac Way and Broadway is recommended for reclassification to C-2 in keeping with existing uses.

AREA 11

A residential area with subdivisions dating from 1905 to 1940.

Problem to maintain and enhance quality because of: smallness of area; adverse external influences (see Area 10); and relative isolation from the rest of Burlingame.

Deterioration is evident in the apartment buildings along Rollins Road.

Street pattern does not encourage an inward focus.

Elementary schools are not conveniently accessible.

Corbett subdivision has many lots 50 ft. x 200 ft. developed with duplex uses.

Rehabilitation program needed.

Area includes problems of deterioration and poor site utilization.

Sidewalks along Bayshore Boulevard and more parks are needed in this area.

AREA 12

Subdivided largely in 1930's.

An area of extremely well-kept small single-family residences.

Area benefits from unified layout and proximity to community facilities, i.e. high school, Peninsula Tennis Club and Washington Park.

A major problem is to improve quality of deteriorating development along Bayshore Freeway and to stabilize this strip. Small park needed in this area. Subjected to increased noise impact from Bayshore Highway traffic.

AREA 13

Burlingame High School and Washington Park.

AREA 14

Subdivided from 1896 to 1906.

An area of older, small single-family residences, a significant number in deteriorating condition. Many deteriorating buildings are located in the blocks between Bayswater and Peninsula. These are properties with a ratio of assessed valuation of land to the assessed value of improvements of more than one. This indicates that many properties in the area are underimproved. There are 21 lots, including vacant lots where the ratio is more than two to one (ratio of AV land to AV improvements) and 13 more with a ratio of one or more.

Some lots are occupied by two dwelling units. Traffic on Peninsula Avenue and higher density uses in San Mateo may cause pressure for increased densities along Peninsula Avenue. The existing water supply system was designed to serve single-family residential and is inadequate to meet present standards for multi-family. Updating and modernizing of the water supply system is essential and should be a prerequisite to the reclassification in this area. In the area between Howard Avenue and Peninsula Avenue, Anita Road and Dwight Road (8 blocks) there are 84 absentee property owners. Fourteen sales of property have occurred since March, 1972.

The welfare case load appears high in this area (data was obtained only for the census tract, which is a larger area).

Northeasterly portion is deficient in park and recreation space.

Area requires careful treatment to maintain quality. Rehabilitation and code enforcement programs are needed.

AREA 15

Area comprises the "automobile row" in Burlingame plus related fair to poor quality fringe residential areas largely in multiple-family use. An encroachment into the residential area along Highland Avenue is occurring.

This part of Burlingame has a mixture of land uses and visual helter-skelter. There is increased congestion due to traffic along California Drive.

Detailed attention is needed to provide guidelines for improvement in this area.

The future of "auto row" is of great significance to the economy of the City and more specific study is needed. Space available for "auto row" is constrained where expansion is essential for a healthy enterprise. The economics of present day auto sales require large dealerships.

Additional space is needed for the storage of machines, parking for customers and adequate storage of inventory and cars awaiting services and repair.

Multi-level parking is a prospective solution.

AREA 16

Last remaining residential area in the City south of Burlingame Avenue business district. An area of single-family residences converted to multiple-family use, plus newer commercial uses and some new apartment buildings; also institutional uses. A six-story condominium with forty-four units will stimulate further change at Park and Bayswater.

Almost all residences occupied by renters.

An area of high welfare case loads.

Completely lacking in park and recreation areas.

Specific standards and guidelines for transition of this area are needed. Future development might include mixed uses: ground floor commercial with offices or apartments above; expansion of auto row.

AREA 17

The central business district of Burlingame poses problems and opportunities for growth. The essential problem is to update and modernize the CBD and attract additional business.

The CBD needs to become a more competitive commercial center on the Peninsula and to capitalize on its special locational advantages. Detailed consideration of the CBD is beyond the scope of this report. For background information see Chapter III, The Economy.^{1/} The reader is also referred to another report prepared as a part of the General Plan program - Burlingame 1967, Opportunities, Problems and Issues, pages 30-34.

Increased parking in the fringe areas is needed to serve employees of downtown businesses. Tall buildings are not desired because of the added parking demand. Low profile buildings are preferred in the downtown area to maintain the intimate human scale and village street environment.

A quarter of a million dollars beautification project on Burlingame Avenue has enhanced the area a bit.

AREA 18

An old area subdivided from 1905 to 1915. It is a residential area somewhat isolated from other parts of Burlingame. It needs to be treated as an entity. There should be adequate facilities, particularly recreation, to serve the area.

Some duplex and multiple-family uses invaded this area in the past although zoned for single-family uses. Reclassification is resisted by single-family dwelling residents.

The strip along El Camino Real is zoned and developed largely for multi-family use. Some older homes, which are within a block of El Camino Real and which are slowly deteriorating because of insufficient maintenance, are now being used as rental units.

Care needs to be taken to protect the entire area.

The site now used for the School Administration building is a desirable site for a neighborhood park.

AREA 19

An area of transition in which the City Hall is located. It, along with the expanded library, provides the nucleus for a civic center at Primrose Road.

Zoning permits office uses as well as multiple-family uses.

^{1/} Wm. Spangle & Associates, BURLINGAME 1968: BACKGROUND FOR THE GENERAL PLAN, pp. 51 through 72.

Some older residences are being replaced with new multiple-family uses.

On-street parking is causing congestion evenings and weekends.

New zoning standards for development in this area should be considered such as limitations on building bulk and number of dwelling units and requiring more usable open space.

AREA 20

An area of good apartment development that is continuing.

Some lots tend to be overbuilt, however, resulting in undesirable crowding. Evening and weekend on-street parking causes congestion.

New standards are needed in this area.

AREA 21

An area of older, small single-family residences in good to very good condition, but there is a gradual change occurring as middle-aged houses grow older.

Little drastic change foreseen in this area.

Need exists to continue to protect this area and to prevent blighting influences.

AREA 22

A rather small residential area somewhat isolated from other residential areas in Burlingame. Physically more closely related to Hillsborough.

Consideration needs to be given to providing some recreation space for this area which is separated from the only nearby play space (McKinley School) by El Camino Real.

Pressure for apartments and condominiums increases conversion of existing apartment buildings and presents added parking problems.

AREA 23

Area of mixed duplex and single-family uses zoned entirely for duplex use.

Duplexes are largely products of single-family residence conversions.

Many single-family residences do not lend themselves to conversion.

Change to duplex uses will continue to be slow.

Lacking park and recreation areas.

Prospect of reclassification to R-3A was deemed "not timely."

Nine hundred and ten hundred block along Capuchino deserve attention first. Then the 1200 block should receive attention.

Little improvement in housing quality or quantity.

AREA 24

Largely an area of multiple-family dwellings with some duplexes and single-family residences. Area continues to develop in multiple-family uses as permitted by the zoning. Small, compact, owner occupied and managed type apartments occupy most of the lots.

Lacking in park and recreation areas.

Need for off-street parking here to serve Broadway businesses. Parking is a problem and circulation difficult because of the proximity to Broadway.

Convenience to Broadway stores enhances this location.

Many elderly folks live here.

AREA 25

The Broadway shopping area suffers from inadequate off-street parking, inadequate provisions for traffic flow, and adverse impact from through-traffic. Because of the traffic problem, the area needs careful review to provide a better shopping environment while still maintaining the village scale.

Study of Broadway shopping area should be undertaken along with redesign of the Broadway-Bayshore interchange, crossing of Southern Pacific tracks and circulation to El Camino Real

Most buildings need modernization.

All stores are occupied and commercial businesses are thriving. The residents of Northpark apartments have stimulated economic growth along Broadway and on California Drive.

AREA 26

Area devoted largely to single-family residences except for apartments along El Camino Real.

Originally subdivided in 1906.

Quality of development quite good and would appear likely to remain as a desirable single-family residential area for some time to come. Almost two-thirds of dwellings occupied by renters.

Transition to apartment development in southern portion should be considered.

Improved circulation is needed adjacent to Broadway and addition of parking lots on the fringe of the commercial area. Long-term parking is needed for employees.

Redevelopment may occur in the areas close to California Drive.

AREA 27

Stable old residential area of single-family residences.

Multiple-family uses along El Camino Real.

Little needs to be done for this area other than to enforce City regulations and encourage good maintenance to ensure its continuance as a high quality residential area.

Portion of area near El Camino Real appears deficient in park and recreation space.

AREA 28

Area subdivided in 1924 and 1940.

An area of well-kept single-family residences.

Lots laid out originally to provide reasonable protection from adverse impact of traffic on California Drive and El Camino Real. It benefits also from the City park in the area.

AREA 29

Comments same as for area 27 except that much of area is beyond reasonable walking distance of a public park or recreation area. A parochial school provides some needed play space.

AREA 30

Single-family residential area subdivided in 1941.

Stable residential area reasonably well laid out and most of the area well served by City park and elementary school.

AREA 31

An area of office buildings. Three new multi-story office buildings will occupy the existing vacant land areas. Intensification of use necessitates parking decks, and parking garages to provide parking for the new office floor area.

Has experienced some problems of traffic congestion and truck loading but solutions are being considered by the City and property owners.

AREA 32

Developed in the 1950's-1960's largely for office uses plus the then existing Peninsula Hospital.

A shopping center of moderate appearance, but providing services for residents, fronts on El Camino Real; parking area needs re-design and tree planting. Lack of landscaping on the plaza parking area irritates the residents of this area. They wish beautification of the center.

A new Petrini Market will occupy the former Key Market after the building is remodeled.

A 36-office condominium, medical office building, is planned on Marco Polo Way, directly behind Peninsula Hospital. This is the last remaining vacant lot on Marco Polo Way. One other vacant area exists in the C-3 District between Magnolia Avenue and Ogden Drive. With these exceptions, there is no vacant land remaining. Private redevelopment of one-story office buildings is a possibility.

AREA 33

Area of relatively recent development with apartments, two-family and single-family dwellings in an organized arrangement. Apartment density per acre is high. Also includes the Burlingame Intermediate School and an elementary school. No significant changes are anticipated in this area in the near future.

AREA 34

Mills Estate Subdivision developed in 1950's and 1960's plus Burlingame Manor developed in 1946.

The most recent residential development in Burlingame, a high quality stable area.

Most of the area well served by parks but the portion northwest of Trousdale Drive is notably deficient.

AREA 35

Russell College (unincorporated area).

Women's college and girls' high school. The area is not extensively developed and provides a large green area in the built environment. A portion of the acreage is part of the Mills Canyon and Creek system.

AREA 36

Burlingame Hills, subdivided in 1926 and 1927.

Unincorporated area with old water system has some mains of inadequate size for fire protection purposes. Waste water collection system is difficult to maintain because of areas that are inaccessible.

Area lacks park and recreation space although private yards are abundant.

AREA 37

Subdivided from 1951-1960.

A stable high quality single-family residential area.

Area lacks park and recreation space although Hoover School serves a portion of the area along with abundant private yards.

AREA 38

Consists of two small subdivisions developed in 1939 and 1956.

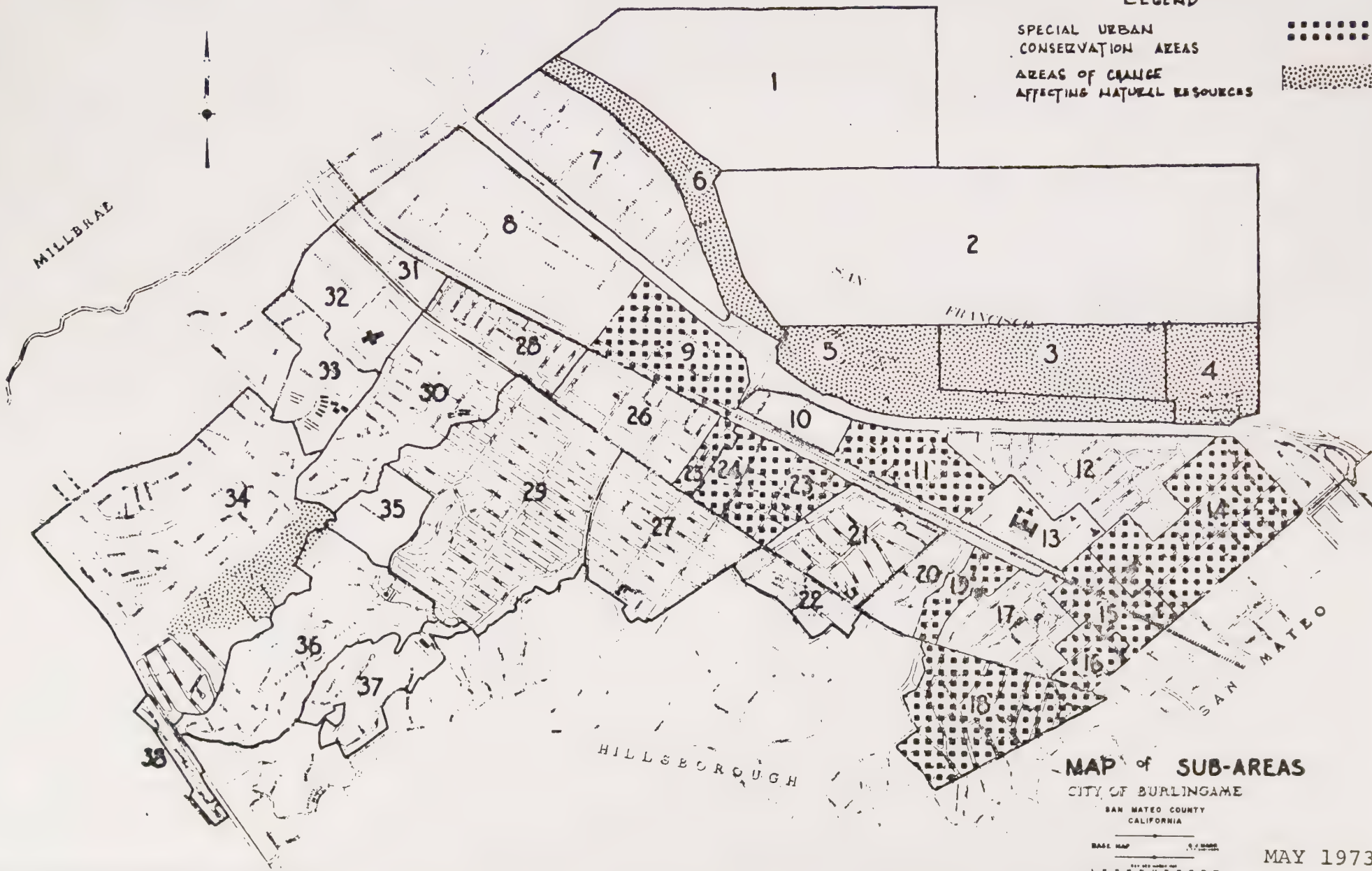
Relatively isolated from other parts of Burlingame and may need some additional neighborhood facilities to provide orientation and adequate amenities.

Lands between Skyline Boulevard and Junipero Serra Freeway appear to be suitable for a neighborhood park.

LEGEND

SPECIAL URBAN
CONSERVATION AREAS

AREAS OF CHANGE
AFFECTING NATURAL RESOURCES



MAP of SUB-AREAS

CITY OF BURLINGAME

SAN MATEO COUNTY
CALIFORNIA

BASE MAP: 1968

MAY 1973

SEISMIC SAFETY ELEMENT
OF THE GENERAL PLAN
FOR THE CITY OF BURLINGAME

PLANNING COMMISSION

Thomas W. Sine, Chairman
Jules L. Francard
Ruth E. Jacobs
Everett K. Kindig
Charles W. Mink
E. L. Norberg
Thomas C. Taylor

CITY COUNCIL

Irving S. Amstrup, Mayor
William J. Crosby
Dorothy Cusick
A. C. Harrison
Victor A. Mangini

Approved by the Planning Commission on June 9, 1975

Adopted by City Council Resolution No. 51-75 on July 21, 1975

RESOLUTION NO. 51- 75

ADOPTING
THE SEISMIC SAFETY ELEMENT
OF THE BURLINGAME GENERAL PLAN

I DO HEREBY CERTIFY THAT THIS IS A FULL, TRUE AND CORRECT COPY OF RESOLUTION NO. 51-75 DULY AND REGULARLY ADOPTED AT A MEETING OF THE CITY COUNCIL OF THE CITY OF BURLINGAME HELD ON THE 21st DAY OF JULY, 1975.

HERBERT K. WHITE, CITY CLERK

BY

Carolyn J. Hill
Deputy City Clerk

WHEREAS, California Government Code Section 65302(f) requires that the General Plan include a Seismic Safety Element including the various considerations set forth in said code section; and

WHEREAS, the Planning Commission of the City of Burlingame, after proceedings duly and regularly had as provided by law did, by its Resolution No. 9-75 entitled, "Approving the Seismic Safety Element of the Burlingame General Plan," adopted June 9, 1975, approve a Seismic Safety Element, and order it to be transmitted to the City Council for further proceedings as required by law; and

WHEREAS, this Council has held at least one public hearing to determine whether it should adopt said Seismic Safety Element as an element of the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

WHEREAS, this Council, after such public hearing at which evidence, both oral and documentary was heard and received, and after due consideration of the evidence and of Resolution No. 9-75 of the Planning Commission approving said Seismic Safety Element, finds that said element, in the form now before the Council, should be adopted.

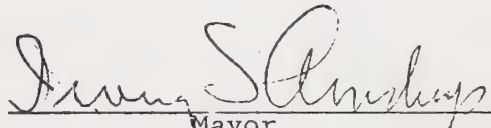
NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF BURLINGAME that:

1. All notices required to be given and all hearings required to be held by Government Code Sections 65351 and 65355

have been given and held in the form and at the time and in the manner prescribed by law.

2. The proposed Seismic Safety Element of the Burlingame General Plan, entitled, "SEISMIC SAFETY ELEMENT OF THE GENERAL PLAN FOR THE CITY OF BURLINGAME," dated June 9, 1975, is hereby adopted as and for the Seismic Safety Element of the Burlingame General Plan, as amended in Exhibit A attached hereto.

3. The City Clerk be, and he is hereby, ordered to transmit a copy of the Seismic Safety Element hereby adopted, together with a certified copy of this Resolution, to the Planning Commission of the County of San Mateo, State of California.



Mayor

HERBERT K. WHITE, City Clerk of the City of Burlingame, does hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 21st day of July, 1975, and adopted thereafter by the following vote:

AYES:	COUNCILMEN:	AMSTRUP, CUSICK, HARRISON, MANGINI
NOES:	COUNCILMEN:	NONE
ABSENT:	COUNCILMEN:	CROSBY

HERBERT K. WHITE, City Clerk

By 

Deputy City Clerk

Exhibit A

Page 4, #9 to read: Many older commercial structures, especially those of masonry construction, may be hazardous in a moderate to severe earthquake.

Page 4 (Major Recommendations) #1 to read: Consider developing a "balanced risk" policy

#3 to read: Establish procedures that could be used to reduce seismic risk in existing buildings.

Page 12 - Masonry Buildings - last sentence to read: A severe quake could collapse

Page 21 (a) to read: Consider vulnerable structures* in relationship to their effect on emergency operations.
(footnote to remain)

Page 25, #1 to read: Consider developing a "balanced risk"

Page 26, #9 to read: Consider selecting a qualified

#10 to read: Consider establishing procedures

#3 to read: Consider placing fault

"Underline" indicates changes.

PREFACE

In 1973 San Mateo County initiated coordinated planning studies with local cities for those State mandated General Plan elements that address technical problems of a regional nature. Seismic safety, air quality, noise, public safety and scenic highways were mentioned as possible topics for joint review.

A work program was drafted for a completion date of September 20, 1974, with costs and staff time budgeted on a shared basis. After further review a more limited objective was agreed: preparation of a countywide combined Seismic Safety - Safety Element. Individual cities would contribute on a per capita basis towards the costs of the technical input, and then be free to add a supplement that would focus the broad report on local issues. In mid 1974 the County Board of Supervisors requested and received an extension of the completion date to September 20, 1975 from the Council on Intergovernmental Relations.

With the completion of the County Planning Department's first draft of the general report, City staff began study of the local problems and special issues that a Burlingame Seismic Safety Element should assess. This report is the result of these efforts, and reviews seismic and geologic findings at a city scale. A number of new policies are recommended for adoption into the General Plan, and possible implementation steps are described that could reduce many of the earthquake associated risks that presently exist in Burlingame.

The Countywide Seismic Safety - Safety Element should serve as a companion report to this local Element, and be used as background for the technical terms and regional profiles necessary for an understanding of geologic and seismic safety issues.

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NEGATIVE DECLARATION OF THIS PROJECT

The City of Burlingame does not have an adopted Seismic Safety Element of the General Plan. The adoption of this element will, of its self, impose no environmental impact on the City or its surroundings. The existence of the Seismic Safety Element of the General Plan, as opposed to no such element, will provide guidelines for the enhancement of public safety, the reduction of risks to acceptable levels, the improvement of response capability in a major earthquake, and the upgrading of codes and regulations to protect lives and property throughout Burlingame.

I. INTRODUCTION

A. General Objectives

Natural seismic hazards exist in Burlingame because of the City's proximity to two major active earthquake faults: the San Andreas Fault running north to south through the hills in the west; and the Hayward Fault, fifteen miles to the east. Earthquakes cause damage, but the risks of loss of life and property can be reduced with a willingness to require high standards of new construction and a careful review of older buildings, existing hazards and emergency action procedures.

The following are recommended objectives:

1. Identification of those areas of the City where special seismic hazard potentials exist.
2. Identification of measures, in addition to those already in effect, that will reduce unavoidable risk, and thus future injuries and loss of lives.
3. Improved community capacity to respond promptly and effectively in the event of a major earthquake.
4. Increased public understanding of seismic safety so that unnecessary risk may be avoided (see also Safety Element*).

B. Legal Basis

1. State Planning Law

California Government Code Section 65302(f) requires:

"A seismic safety element consisting of an identification and appraisal of seismic hazards such as susceptibility to surface ruptures from faulting, to ground shaking, to ground failures, or to the effects of seismically induced waves such as tsunamis and seiches.

"The seismic safety element shall also include an appraisal of mudslides, landslides, and slope stability as necessary geologic hazards that must be considered simultaneously with other hazards such as possible surface ruptures from faulting, ground shaking, ground failure and seismically induced waves."

* The Seismic Safety Element is closely related to the Safety Element. Both are concerned with the hazards of unstable geological conditions and their effects on personal injuries and property damage. The Safety Element, however, stresses the relationship of other natural hazards to public safety.

2. CIR Guidelines

The legislature in 1972 directed the Council on Intergovernmental Relations to draft advisory guidelines for General Plan Elements. The most pertinent excerpt from G. C. Section 3421.1 reads:

"In connection with its responsibilities under Section 3421.1, the Council shall develop and adopt guidelines for the preparation and content of the mandatory elements required in city and county general plans by Article 5 (commencing with Section 65300) of Chapter 3 of Title 7."

C. Summary of Findings

1. Burlingame has no known major active faults within the city limits. The San Andreas Fault Zone, however, lies immediately west of the city.
2. The Serra Fault, a low potential active fault, bisects the western hills (see Plate 1)
3. The alluvial deposits overlaying bedrock, and particularly the baymuds under recent fill, intensify ground shaking in those areas due to the average earthquake.
4. Soil instability due to earthquake induced landsliding would probably be confined to limited areas of the western hills already known to be unstable (see Plate 3)
5. Hazard from loss of soil stability and subsidence due to liquefaction in the event of a large quake may be present in areas of alluvial deposits, but the degree of risk has not been established.
6. Inundation hazard of developed Baylands by tsunamis is limited to the immediate shoreline (see Plate 5)
7. The great majority of single family homes in Burlingame will not constitute a major risk to their residents in a major earthquake.
8. Multi-storied, multi-family structures are likely to be considerably more vulnerable to damage under similar conditions in a major earthquake.
9. Many older commercial structures, especially those of masonry construction, may be hazardous in a moderate to severe earthquake.

10. City and County disaster planning at present does not make extensive provision for major earthquake disasters.

D. Major Recommendations

1. Consider developing a "balanced risk" policy that relates seismic hazards to acceptable risk by building type and intensity of use.
2. Require that new development incorporate seismic hazard mitigation measures to reduce risk to an acceptable level.
3. Establish procedures that could be used to reduce seismic risk in existing buildings.
4. Review and update the City's disaster preparedness plan.
5. Improve interjurisdictional cooperation and communication in regard to seismic safety.
6. Advocate seismic safety educational programs for schools and promote greater general public awareness of all types of geotechnical hazards.
7. Periodically update and refine this element to enable it to achieve its general objectives.

II. BACKGROUND

A. Area Covered

This seismic safety study is focused on the City of Burlingame, with recommendations directed to local responses. It is recognized, however, that the natural hazards leading to local seismic and geologic problems are shared with both the County and other areas of this State. The Countywide Seismic Safety - Safety Element describes these hazards and helps establish the context for the physical limits set in this report.

B. Factors Considered

This Seismic Safety Element will treat identified seismic hazards due to faults, ground shaking effects, ground failures, seiches and tsunamis, and mudslides that may occur as the result of seismic activity. To the limited extent that data is presently available, an analysis could be made of the existing older buildings in Burlingame to assess their susceptibility to damage. The risks inherent in other structures and potential

disruption to the City's underground utilities will also be reviewed. The planned response to public safety and economic aspects are additional major factors to be considered in this element.

C. Information Sources

In addition to the County of San Mateo's review of regional seismic hazards, this element has drawn on a report prepared for Burlingame by Howard F. Donley & Associates on the Geologic Fault Hazard Zone in the western hills of the city. The report identified the location of the Serra Fault, a low potential active fault within the terms of the Alquist-Priolo Act, and suggested procedures that could be used to reduce risk of damage from future fault movements.

The City's Building Department contributed a number of soils reports on bayland properties that have been recently filled. Other data was drawn from the Basic Data Contribution series published jointly by the U. S. Department of the Interior - Geological Survey and by the U. S. Department of Housing and Urban Development as a part of their San Francisco Bay Region Environment and Resources Planning Study project. These documents and others are listed in the bibliography at the end of this element.

III. SEISMIC HAZARDS

A. Active Faults

San Andreas Fault is one of the more active in California and stretches for 650 miles north-to-south. It was responsible for the San Francisco 1906 earthquake, and the less severe 1957 quake that damaged Daly City. It may mark the boundary between the Pacific and North American plates of the earth's crust. Its position just west of Burlingame avoids the hazard of surface rupture within the city, but threatens major ground shaking and ground failure in future.

Hayward Fault lies about fifteen miles to the east of Burlingame at the base of the East Bay hills. Historically, this fault has produced the most moderate-sized earthquakes in the Bay Area and future ones could be sharply felt here.

Serra Fault is a minor thrust fault that runs from Millbrae through Burlingame, passing under the western end of Mariposa Drive and moving south via Mills Creek to Kenmar Way and then Hillsborough. Considered to have common roots with the San Andreas Fault, it is assumed to be potentially active and poses future problems of surface rupture and damage to any structure built over its path. Little risk to life is anticipated.



PLATE 1 SERRA FAULT

- Boundary of State Special Study Zone
- - - - - Approximate Location of Serra Fault

CITY OF BURLINGAME

SAN MATEO COUNTY

CALIFORNIA

REVISED: JANUARY, 1972

GRAPHIC SCALE

B. Ground Shaking

The major cause of damage during an earthquake is ground shaking, with frequency and amplitude of motion dependent on local geologic conditions. Sites on bedrock tend to have sharp, high frequency jolts with little amplitude, while sites on deep alluvium receive lower frequency shocks but suffer movement with high amplitude.

Recent regional studies have suggested that the response of certain soils such as "baymuds" to earthquakes will also vary according to the depth of soil and the magnitude of the quake. Thus, ground accelerations of smaller quakes are magnified as much as three times over the accelerations in bedrock, whereas ground accelerations of a large quake (7.5 or more on the Richter scale) would be reduced to a value below that of the underlying bedrock.*

Burlingame's industrial area and waterfront commercial district are on fill over "baymud" and may be subject to both unequal settlement and increased accelerations from most local earthquakes. The additional potential for damage from liquefaction and sliding is also present for those buildings with inadequate foundations.

C. Landslides

Many of the natural factors that promote landsliding, such as steep slopes, poorly consolidated bedrock, and occasional heavy rainfall, are present in Burlingame's western hills.

Some recent land developments may have increased the natural hazards; adding structures and fill to marginally stable slopes, removing natural vegetation, improperly handling rainwater runoff or simply watering lawns on unstable slopes will increase the danger of a landslide. In general, where slopes are steepened or their moisture content increased, a higher landslide potential is created.

An area with a history of landsliding should be of special concern, as most landslide activity seems to recur within or adjacent to such areas.

D. Soil Stability

Four broad groups of soils exist in Burlingame:

1. Baylands: extensive fill over the "baymud" of the historic marshlands.

* Redwood City, General Plan: Seismic Safety
Element, pg. 8

2. Alluvium Plains: gravel, sand, silt and clay deposits under the Town of Burlingame, Corbitt Tract, Burlingame Park and the lower portions of the Easton Addition.
3. Foothill Band: "Merced Formation" sandstone, siltstone and claystone, with some slope wash and ravine fill of gravel, silt and clay.
4. Western Hills: primarily sheared Franciscan rocks of a variety of types, including graywacke-sandstone, chert, greenstone, serpentine and blueschist, often held in a softer matrix of clay materials.

Under seismic conditions most Burlingame soils are reasonably stable. Exceptions include the Baylands and the limited areas of the hills where unstable slopes and possible surface rupture from the Serra Fault make local hazardous conditions. Incomplete information makes it difficult to establish the extent of the possible hazard on the alluvium plains and baylands from liquefaction, where a loss of strength suddenly occurs because of excess pore pressure under seismic shock conditions: this hazard is limited to alluvial soils underlain by lenses of water-bearing sands and gravels.

E. Inundation of Developed Areas

"Tsunamis" are seismic sea waves, often called tidal waves. Burlingame's position on the southwest shore of San Francisco Bay effectively shields the city from these major ocean waves. However, secondary waves would cause limited inundation of the lower baylands.

"Seiches" are earthquake induced waves in lakes and reservoirs. There may be a limited hazard from such waves in the "inner lagoon" between Bayshore Freeway and Anza Pacific Corp. property.

Extensive other areas of the city are subject to a 100 year flood. Damage from such storms is likely to exceed inundations of seismic origin, and affect structures and utilities throughout the industrial district, Burlingame Grove, Villa Park and parts of the original Burlingame Land Company subdivision.

IV. STRUCTURE AND UTILITY RISKS

The State Joint Committee on Seismic Safety has observed that "the works of man" loom as the principal cause of earthquake (risk) and in a seismic region like California, every significant structure can be expected to undergo at least one major earthquake in its lifetime. Every structure should be made as secure against shaking or ground failure as is practical."

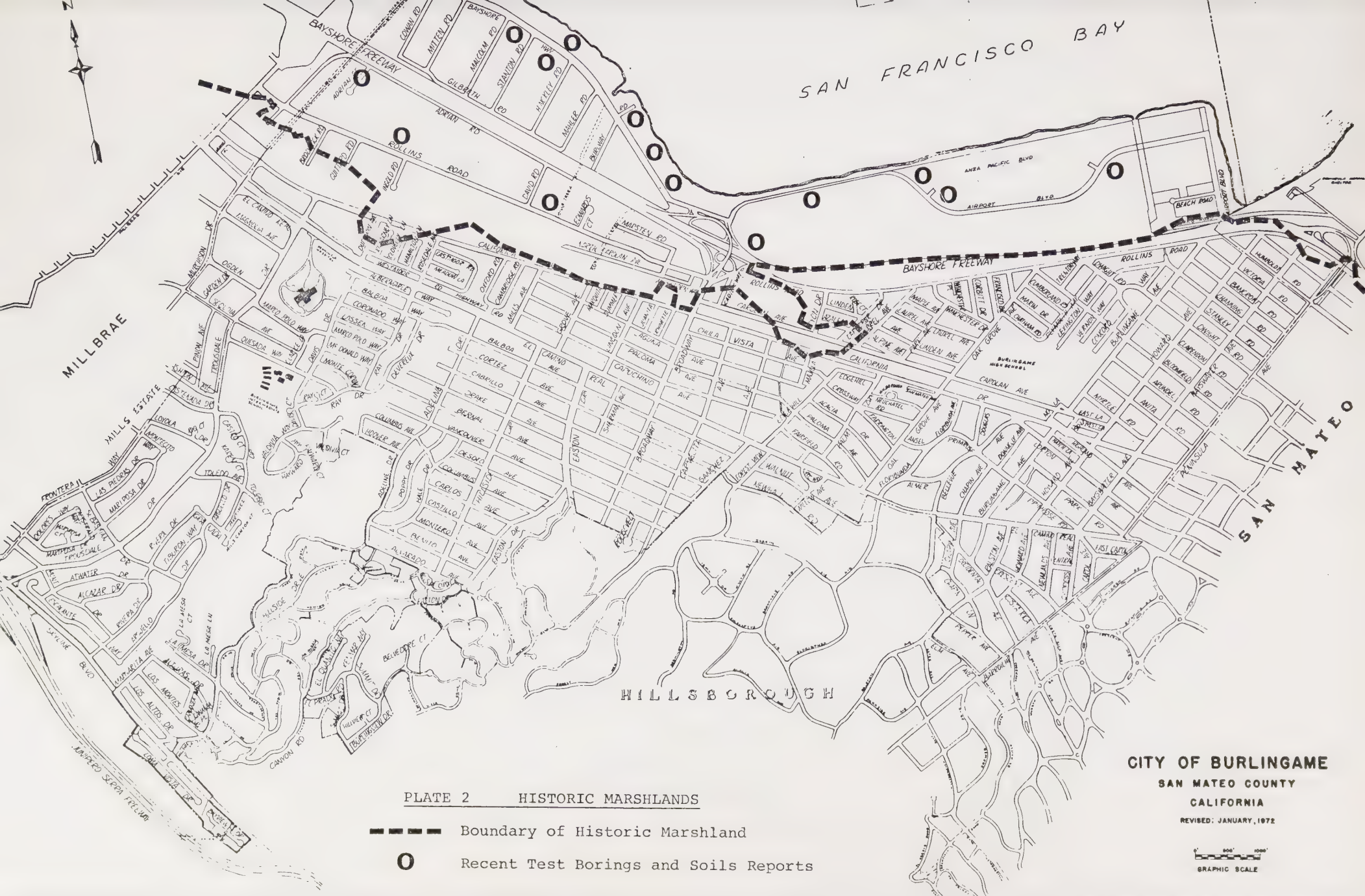


PLATE 2 HISTORIC MARSHLANDS

- Boundary of Historic Marshland
- Recent Test Borings and Soils Reports

CITY OF BURLINGAME
SAN MATEO COUNTY
CALIFORNIA
REVISED: JANUARY, 1972

GRAPHIC SCALE



SAN FRANCISCO BAY

MILLBRAE

HILLSBOROUGH

SAN MATEO

CITY OF BURLINGAME
SAN MATEO COUNTY
CALIFORNIA
REVISED: JANUARY, 1972

PLATE 3 LANDSLIDE DEPOSITS

--- Area of Moderate Landslide Risk
O Landslide Deposits

GRAPHIC SCALE

Revised 7-17-75



PLATE 4 LOCAL GEOLOGY

- 1 Artificial Fill
- 2 Alluvium: gravel, sand and clay
- 3 Predominantly Sand
- 4 Merced Formation: sandstone, siltstone and claystone
- 5 Sheared rocks in matrix of clay
- 6 Greenstone
- 7 Ravine fill and colluvium

CITY OF BURLINGAME

SAN MATEO COUNTY

CALIFORNIA

REVISED: JANUARY, 1978

GRAPHIC SCALE

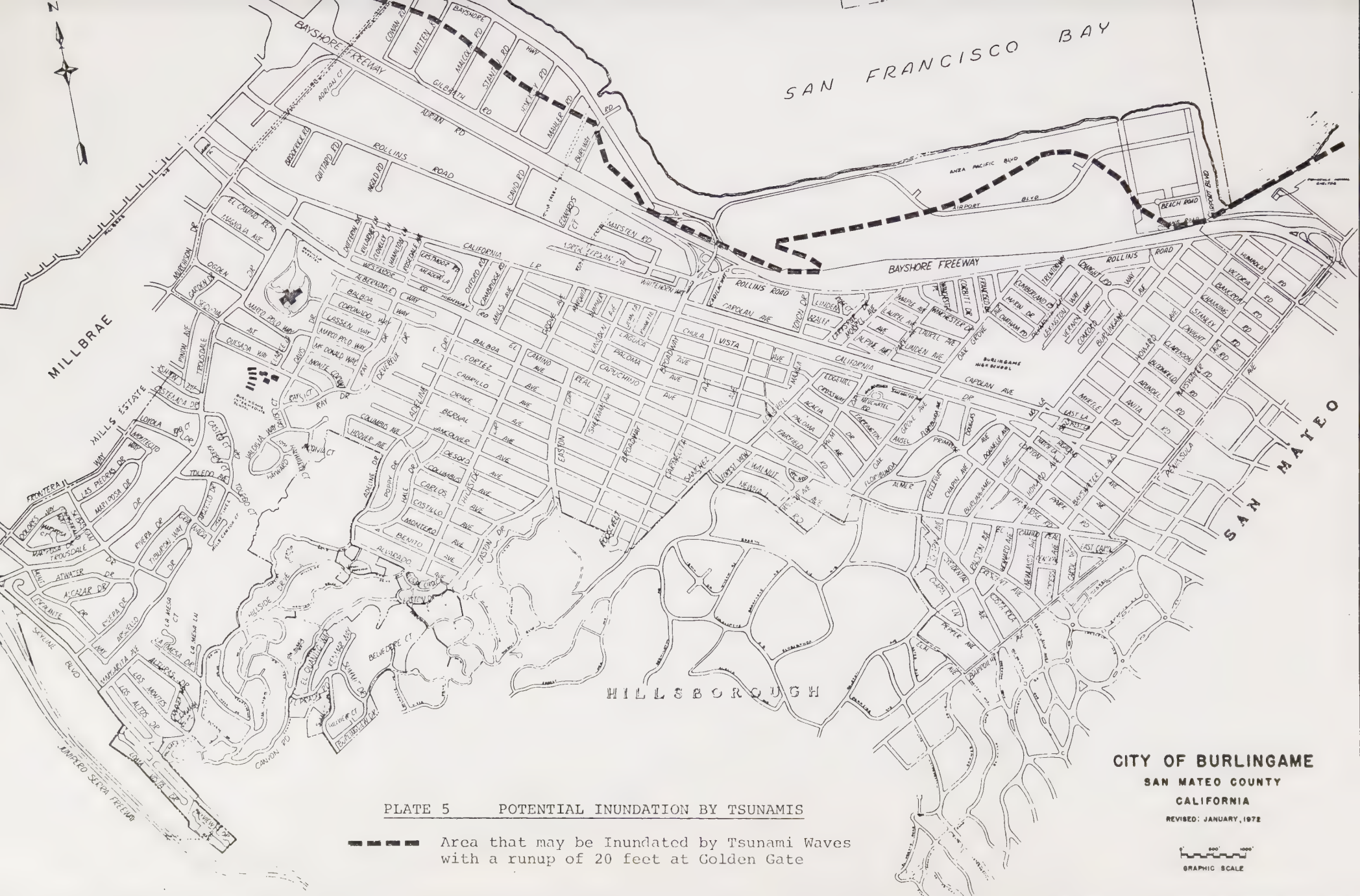


PLATE 5 POTENTIAL INUNDATION BY TSUNAMIS

Area that may be Inundated by Tsunami Waves with a runup of 20 feet at Golden Gate

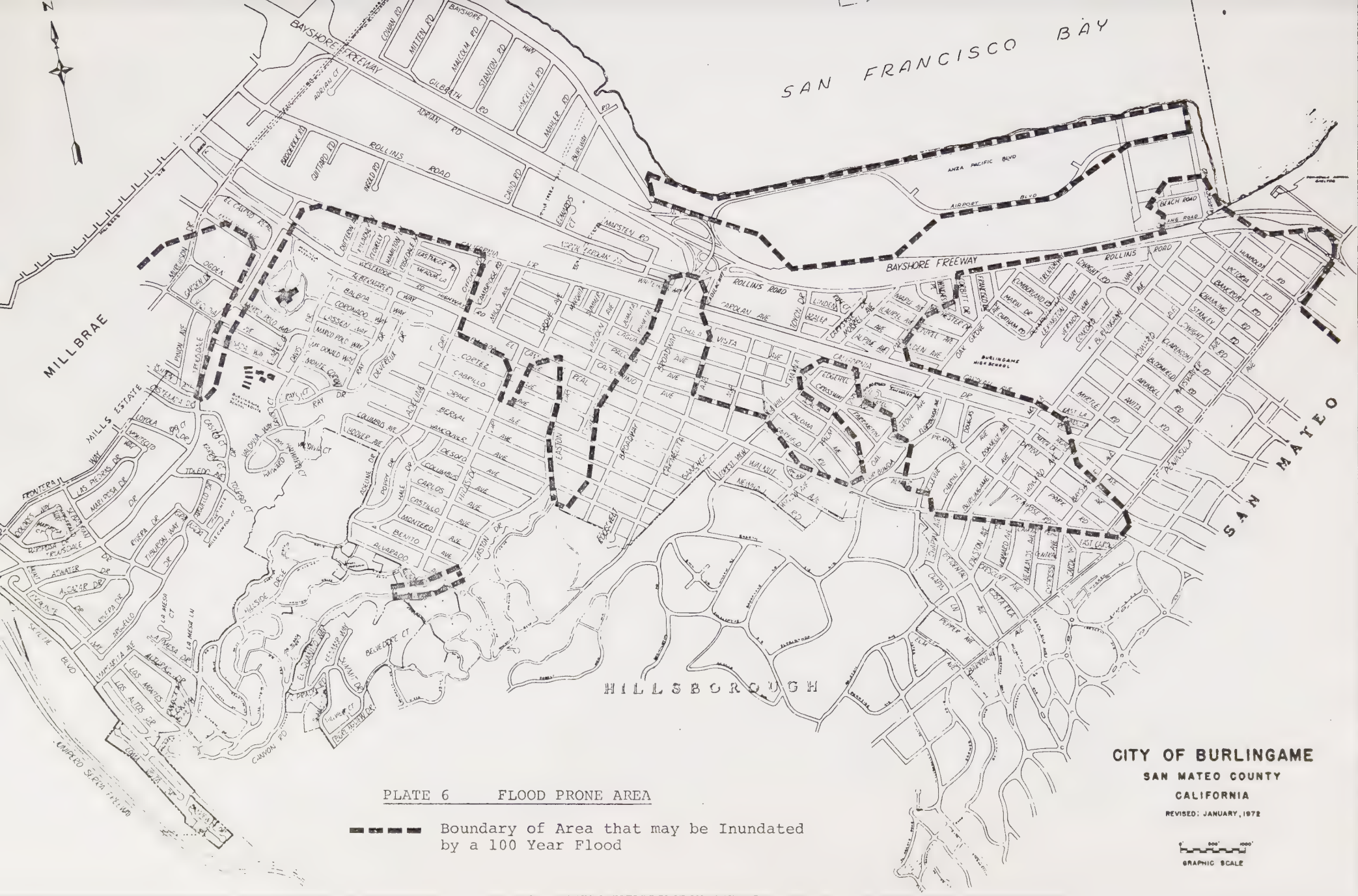
CITY OF BURLINGAME

SAN MATEO COUNTY

CALIFORNIA

REVISED: JANUARY, 1972

GRAPHIC SCALE



A. Wood Frame Buildings

The majority of buildings in Burlingame are one and two-story timber construction. Such buildings can be expected to perform fairly well during a moderate quake, and many would survive a large one. Those built to the requirements of the 1933 or later editions of the Uniform Building Code have a high resistance to seismic forces, and although they may be damaged in a severe earthquake, human casualties will likely be minimal.

There are two significant possible exceptions to the above:

1. Wood frame dwellings constructed on steep hillsides where ground failure may cause such intense local stress on the foundation and structure that a general collapse occurs.
2. Wood frame apartments built above a one-story parking garage. The masonry walls of the garage are often a weak link, and subject to local failure.

B. Masonry Buildings

Masonry buildings in Burlingame are concentrated in the city's shopping areas and industrial district. Many of these buildings are new and strongly reinforced. However, many of the older structures would be badly damaged in a moderate quake, with older open-front commercial buildings receiving severe glass damage and some degree of roof failure. A severe quake could collapse unreinforced masonry walls (pre-1933 construction) and encourage major roof failure and consequent loss of life in these structures.

C. Other Structures

Hospitals, fire and police facilities are especially critical, with the requirement that they must survive a strong earthquake and continue to supply the emergency services that Burlingame would need immediately afterward. Section VI of this element reviews the role of earthquake response planning.

Public schools are another sensitive facility, and have been the focus of a recent State program to upgrade their safety. New schools, and those older schools reinforced to current code requirements, have had the best performance record of all major structures in recent California earthquakes. Private schools are not generally constructed to the same standards, and the potential for casualties is correspondingly larger.

Minor structures, such as swimming pools, can create unnecessary risks if they are badly located and under-designed. A pool in the hills which breaks and empties may cause a mudslide, with further damage if there is a house or utility lines in the path of the mud flow.

D. Public Utilities

1. Water: buried water pipes generally have a good record even in heavy quakes, providing no strong shear forces develop.
2. Electricity: a major quake could result in a 50% loss of service for 24 hours. PG&E is not responsible for emergency power supply.
3. Natural gas: most gas pipelines traverse bay mud areas, with the consequent risk that ground distortion during an earthquake could rupture a pipe and cause a partial pressure failure.
4. Sanitary and storm sewer systems: older sewerage systems, with rigid joints coupled with brittle piping, can expect major damage. A further problem is likely to exist where trunk sewers cross bay mud to disposal plants.

V. BALANCED RISK POLICY

The two central questions to any review of seismic hazards are: How much loss of life and property damage are we willing to risk in future tremors? What costs are we willing to bear to reduce these risks? The objective of this section of the Seismic Safety Element is to develop an approach to a policy that will answer these questions, and make clear the values of the City Council to the general community that may be expected to share these costs.

A. Hazard vs. Risk

The terms "hazard" and "risk" are often used interchangeably. Yet each has a specific, separate meaning:

1. Seismic hazard is defined as "expected occurrence of future adverse seismic event."
2. Seismic risk is defined as "expected consequences of future seismic event."

Earthquakes do occur, and cannot be prevented. But the consequences of an earthquake -- loss of life, property damage,

social and economic disruption -- can be made less severe. Earthquake hazards can be studied, while seismic risks can be reduced with better methods of construction and future patterns of land use.

Certain generalities can be noted:

1. Risk is a part of everyday life as all activities have some risk associated with them.
2. Minimizing risks often results in higher construction costs. A decision is needed on the balance between construction costs and risk levels acceptable to the community.
3. Some risks are taken unknowingly. The public should be aware of the seismic risks it takes in certain situations.
4. With existing structures, risks can be reduced by relocation, demolition, physical alteration or changing the use of these structures.

B. Voluntary vs. Involuntary Risks

Where people have little or no choice as to the structures they occupy, the seismic risk ought to be extremely low. Examples of such structures include schools, hospitals, libraries and other places of public assembly. In the case of private structures, the presumption is that somewhat higher risks are acceptable when these risks are knowingly taken.

C. Balanced Risk Policy

Safeguards from seismic risk are designed into most new construction through earthquake standards in the Uniform Building Code. Average earthquake forces are estimated, safety factors added, and design coefficients produced that are applied to new buildings. However, if a severe earthquake strikes closer than expected, the structure may fail despite the code and its standard factor of safety.

A recent code change adopted by the City of Long Beach adds a new criterion: what does the community judge to be a "tolerable death risk?" Presented with a risk range of one death per 100,000 people per year exposed, to one per 10,000,000, the City Council decided on a death risk of one death per million people per year exposed for all existing buildings. This recognizes that buildings intensively used, and likely to be in use for many years, should be stronger than other structures with modest occupant loads. For example, a hospital occupied by thousands of people twenty-four hours each day, to be used for 50 years, should have a

higher earthquake resistance than a single-story warehouse occupied by a half-dozen people eight hours each day for 10 years. Using present codes, the risk of death per person exposed will be higher in the hospital than in the warehouse. The risks should be at least equal, and perhaps favor the hospital on the theme of voluntary/involuntary risk.

Four factors can be assembled into an earthquake risk policy:

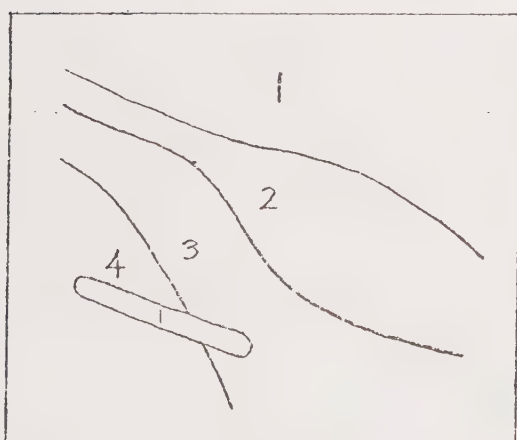
1. Number of people using a given building per day.
2. Expected life of the building.
3. 'Critical facility' judgement on building's importance to the community.
4. Evaluation of the seismic or geologic hazards in the environs of the proposed or existing building.

Implementation of the balanced risk policy would require:

1. Assign an "importance factor" to a building.

Ave. Daily Exposure (Persons)	X	Expected Bldg. Life Span (Years)	Importance Factor
1000 and over	}	-	1
100 - 999		-	2
10 - 99		-	3
0 - 9		-	4

2. Map of city with iso-hazard lines.



- 1 Maximum seismic hazard
- 2 Moderate
- 3 Low
- 4 Minimum seismic hazard

3. Matrix comparing (1) with (2), and assigning "safe design standards".

		Hazard Zone			
		1	2	3	4
Importance	1	D	D	D	C
Factor	2	D	C	C	B
	3	C	B	B	A
	4	B	A	A	A

4. Recommended safe design standards.

- (A) Current building code must be met, as well as other State and local ordinances and regulations.
- (B) All of the above, plus sufficient geologic, seismic, soil and structural engineering analysis to safely determine stability of the site relative to the occupancy and the intended use. Investigations beyond the confines of a given site may be required in order to obtain the necessary data.
- (C) All of the above, plus one or more of the following if required by the building official: 1) Subsurface boring to determine liquefaction potential; 2) Foundation investigations to determine and estimate differential settlement potential; 3) Detailed fault and/or landslide analysis.
- (D) All of the above, plus dynamic ground and structural response, and dynamic structural analysis of structures.

This approach to seismic and geologic hazards has the advantage of recognizing the use, location and expected life of a building, and could supplement present earthquake codes to maintain safety standards measured on a risk-exposure basis. It could be applied to both new and existing structures. Applied to older buildings, it would provide an objective basis for a renovation program by property owners, improving the more dangerous buildings first.

VI. SEISMIC DISASTER PREPAREDNESS

The term "seismic disaster", as used in this element, means significant and widespread damage of buildings and infrastructure as the result of an earthquake. A "disaster" does not necessarily imply casualties but means that the effects of a seismic disturbance have seriously disrupted the normal life and economy of the city.

A. City of Burlingame Emergency Operations Plan

The County of San Mateo and twenty of its cities comprise the San Mateo Operational Area Civil Defense and Disaster Organization. This organization works with State and Federal counterparts and is headquartered in Redwood City. Its operational plan outlines the roles of the County and the several cities in the event of a natural disaster, and is intended to provide coordination, leadership and area-wide communications.

The City of Burlingame has a Complementary Emergency Operations Plan. Originally prepared as a civil defense handbook, concerned with enemy attack and nuclear fallout, the plan has recently been expanded to include "natural disasters" - windstorms, floods and fires - and in a minor way, seismic and geologic events. However, with recent advances in State and County knowledge of earthquake response planning, several of the fundamental concerns of Burlingame's Emergency Operations Plan should be amended and brought up to date. Task priorities during a seismic disaster should also be more clearly identified within the organizational responsibilities already specified in the Plan.

B. Earthquake Response Planning

The State Office of Emergency Services recommends that local earthquake emergency plans include provisions for:

1. An organization which:

- (a) Has assigned emergency functions to intra-jurisdictional agencies to perform field operations;
- (b) Has personnel designated and trained to perform specific tasks both within the control center and the damaged area;
- (c) Controls and coordinates field operations from a predesignated, earthquake-resistant control center;

- (d) Has communications to all operating field forces and with higher and lower levels of government, to exchange operational information;
- (e) Has a staff to prepare and disseminate essential public information;
- (f) Conducts exercises to perfect and test plans and procedures.

2. Pre-earthquake preparations which:

- (a) Consider vulnerable structures* in relationship to their effect on emergency operations;
- (b) Have outlined areas subject to inundation due to the failure of dams, and developed plans and procedures for rapid notification and evacuation of people from such areas;
- (c) Identify and inventory available essential resources;
- (d) Establish procedures for obtaining mutual aid;
- (e) Insure continuity of emergency communication systems, including augmentation of operating agency radio communications with Radio Amateur Communications Emergency Services or other organized volunteer emergency radio capability; and
- (f) Insure continued operation or rapid restoration of essential public utilities.

3. Post-earthquake operations which:

- (a) Provide rapid surveillance and assessment of the damaged area;
- (b) Search out and rescue people trapped in damaged structures of isolated danger areas;
- (c) Conduct medical triage for the injured;
- (d) Provide first aid in the damage area and transport injured to emergency medical facilities;

* Note: Inspections would be concentrated on commercial and industrial properties, public buildings and older apartment buildings. Single family dwellings would be excluded because they have no priority in this type of program.

- (e) Provide necessary fire prevention, firefighting and lifesaving services in devastated or threatened areas;
- (f) Clear debris from transportation routes into and away from damaged areas;
- (g) Evacuate or direct people from danger areas to locations providing relative safety, shelter, and sustenance;
- (h) Provide traffic supervision and control along established evacuation routes, and security for evacuated areas;
- (i) Care for displaced people;
- (j) Remove, identify, and preserve dead for future disposal;
- (k) Provide for reuniting families;
- (l) Provide for informing victim's relatives outside of area;
- (m) Relieve hardship and expedite rapid and orderly reconstruction and redevelopment;
- (n) Prepare and disseminate essential public information through the news media;
- (o) Prepare and maintain a log of operations; and
- (p) Develop a procedure for cooperating with qualified earthquake investigators.

C. Public Awareness

Unlike many other natural disasters, an earthquake gives little or no warning before it strikes. It is important, therefore, that preparations be taken by the public before the event to reduce the risk of damage and loss of life. Precautions include:

1. Potential earthquake risks in the home should be corrected.
2. Supplies of food and water, a flashlight, a first aid kit, and a battery-powered radio should be set aside for use in emergencies.

3. One or more members of the family should have a knowledge of first aid procedures because medical facilities nearly always are overloaded during an emergency or disaster, or may themselves be damaged beyond use.
4. All responsible family members should know how to turn off the electricity, water and gas.

Public awareness of seismic hazards and risks should be encouraged whenever possible. And with the recognition that some damage will occur, in spite of all precautions, the State's Joint Committee on Seismic Safety has recommended that all new borrowers who are purchasing residential structures should be required by lending institutions to have earthquake insurance, just as is now the case for fire insurance.

VII. IMPLEMENTATION

Since Seismic Safety is a new element of the Burlingame General Plan, it should be looked upon as a first phase in a continuing process of research, refinement and implementation. The following actions are recommended to begin this process.

A. Research

1. Collect and analyze further information on:
 - (a) Alluvium and baymud hazards.
 - (b) Liquefaction hazard.
 - (c) Landslide and mudslide hazards.
 - (d) Hazards from tsunamis and seiches.
2. Refine the seismic-geologic hazards map of the city; develop iso-hazard lines.
3. Establish standards to reduce seismic risk in existing hazardous structures; review methods to incorporate seismic risk analysis into the existing city structural inspection program.
4. Identify procedures to inspect and evaluate existing high risk structures.
5. Research potential break points in public utility systems, with attention to:
 - (a) Major water storage tanks.

- (b) Principal water mains and fire flow capability in seismic disaster conditions.
- (c) Sewage mains crossing areas of baymud.
- (d) Sewage treatment plant.

B. Policies

1. Consider developing a "balanced risk" policy that relates seismic hazards to acceptable risk by building type and intensity of use.
2. Require that new development incorporate seismic hazard mitigation measures to reduce risk to an acceptable level.
3. Institute a continuing program of evaluating existing structures with a high risk rating, a high intensity occupancy and those critical facilities that must survive a severe earthquake.
4. Encourage the reduction of risks associated with the more dangerous existing buildings through action programs, including renovation and occupancy reduction.
5. Consider an ordinance requiring the preparation of internal emergency response plans for facilities housing dependent populations.
6. Define a policy for properties over or immediately adjacent to the Serra Fault.
7. Periodically update and refine this element to enable it to achieve its general objectives.
8. Consider the establishment of a Seismic Safety Committee to assume responsibility for the implementation of this element.
9. Consider selecting a qualified geotechnical firm to advise the city during the implementation period of the larger seismic safety projects.
10. Consider establishing procedures to make available to the public all known, pertinent geotechnical data regarding their property, and other reports of a more general nature on city-wide seismic hazards.

C. Action

1. Implement agreed programs to improve or abate existing dangerous buildings.

2. Survey major structures to determine the need for a parapet ordinance (applying to parapets, signs, marquees and general ornamentation).
3. Consider placing fault movement gauges along active fault traces to monitor activity.
4. Review and update the City's disaster preparedness plan.
5. Assess need for additional earthquake and flood insurance on City property and facilities.
6. Improve interjurisdictional cooperation and communication in regard to seismic safety.

REFERENCES CONSULTED

General

1. State of California, Division of Mines & Geology, Guidelines to Geologic/Seismic Reports (CDMD Notes No. 37), August 1973.
2. State of California, Office of Emergency Services, Earthquake Response Planning and Operations Guide, January 1974.
3. State of California, Joint Committee on Seismic Safety, Meeting the Earthquake Challenge, January 1974.
4. Brabb and Pampeyan, Preliminary Geologic Map of San Mateo, U.S.G.S. Map MF-328, 1972.
5. San Mateo County, General Plan: Seismic Safety - Safety Element, 1975.
6. Redwood City, General Plan: Seismic Safety Element, September 1974.
7. J. H. Wiggins, The Balanced Risk Concept, August 1972 issue of Civil Engineering - ASCE.

Baylands

8. Lee and Lugo, Flood-Prone Area, U.S.G.S. Water-Resources Investigation 37-73 (Sheet 3).
9. Nichols and Wright, Historic Margins of Marshland, U.S.G.S. preliminary map, 1971.
10. Ritter and Dupre, Areas of Potential Inundation by Tsunamis, U.S.G.S. Map MF-480, 1972.
11. Various authors, Soils Reports: project-by-project review of recent building sites (see Plate

Hills Area

12. Howard F. Donley & Associates, Geologic Fault Hazard Zone Study, February 1975.
13. Brabb, Pampeyan and Bonilla, Landslide Susceptibility in San Mateo County, U.S.G.S. Map MF-360, 1972.
14. Brabb and Pampeyan, Landslide Deposits in San Mateo County, U.S.G.S. Map MF-344, 1972.

SAFETY ELEMENT
OF THE GENERAL PLAN
FOR THE CITY OF BURLINGAME

PLANNING COMMISSION

Thomas W. Sine, Chairman
Jules L. Francard
Ruth E. Jacobs
Everett K. Kindig
Charles W. Mink
E. L. Norberg
Thomas C. Taylor

CITY COUNCIL

Irving S. Amstrup, Mayor
William J. Crosby
Dorothy Cusick
A. C. Harrison
Victor A. Mangini

Approved by the Planning Commission on June 23, 1975

Adopted by City Council Resolution No. 60-75 on August 18, 1975

I DO HEREBY CERTIFY THAT THIS IS A FULL, TRUE AND CORRECT COPY OF RESOLUTION NO. 60-75 DULY AND REGULARLY ADOPTED AT A MEETING OF THE CITY COUNCIL OF THE CITY OF BURLINGAME HELD ON THE 18th DAY OF AUGUST, 1975.

HERBERT K. WHITE, CITY CLERK

BY *Ernest H. Hill*
Deputy City Clerk

RESOLUTION NO. 60 - 75

ADOPTING
THE SAFETY ELEMENT
OF THE BURLINGAME GENERAL PLAN

WHEREAS, California Government Code Section 65302.1 requires that the General Plan shall include a safety element including protection from fires and geological hazards; and

WHEREAS, The Planning Commission of the City of Burlingame, after proceedings duly and regularly had as provided by law did, by its Resolution No. 10-75 entitled, "APPROVING THE SAFETY ELEMENT OF THE BURLINGAME GENERAL PLAN," adopted June 23, 1975, approved a Safety Element, and ordered it to be transmitted to the City Council for further proceedings as required by law; and

WHEREAS, this Council has held at least one public hearing to determine whether it should adopt said Safety Element as an element of the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

WHEREAS, this Council, after such public hearing at which evidence, both oral and documentary was heard and received, and after due consideration of the evidence and of Resolution No. 10-75 of the Planning Commission approving said Safety Element, finds that said element, in the form now before the Council should be adopted;

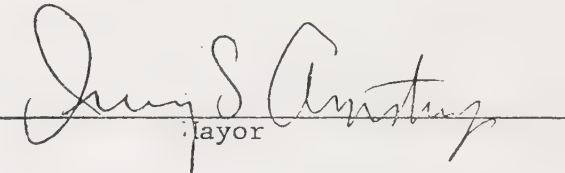
NOW, THEREFORE, IT IS HEREBY RESOLVED by the CITY COUNCIL OF THE CITY OF BURLINGAME that:

1. All notices required to be given and all hearings required to be held by Government Code Sections 65351 and 65355

have been given and held in the form and at the time and in the manner prescribed by law.

2. The proposed Safety Element of the Burlingame General Plan, entitled, "SAFETY ELEMENT OF THE GENERAL PLAN FOR THE CITY OF BURLINGAME," dated June 23, 1975, is hereby adopted as and for the Safety Element of the Burlingame General Plan.

3. The City Clerk be, and he is hereby, ordered to transmit a copy of the Safety Element hereby adopted, together with a copy of this Resolution, to the Planning Commission of the County of San Mateo, State of California.


Mayor

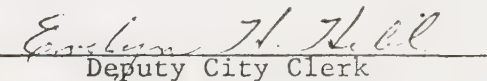
HERBERT K. WHITE, City Clerk of the City of Burlingame, does hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 18th day of August, 1975, and adopted thereafter by the following vote:

AYES: COUNCILMEN: AMSTRUP, CROSBY, CUSICK, HARRISON

NOES: COUNCILMEN: NONE

ABSENT: COUNCILMEN: MANGINI

HERBERT K. WHITE, City Clerk

By 
Deputy City Clerk

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NEGATIVE DECLARATION OF THIS PROJECT

The City of Burlingame does not have an adopted Safety Element of the General Plan. The adoption of this element will, of its self, impose no environmental impact on the City or its surroundings. The existence of the Safety Element of the General Plan, as opposed to no such element, will provide guidelines for the enhancement of public safety, the reduction of risks to acceptable levels, the improvement of response capability in a major disaster or emergency, and the upgrading of codes and regulations to protect lives and property throughout Burlingame.

I. INTRODUCTION

A. General Objectives

The purpose of this element is to introduce public safety considerations in the planning process, and to consider means by which loss of life, injuries, damage to property, and economic or social disruption may be reduced within the City of Burlingame.

Hazards of special concern are: fires, floods, the breakdown of essential public services and utilities, landslides and limited other geologic events. The intent is to begin a coordinated program that will more precisely define these hazards, determine a level of acceptability, and propose implementation measures to reduce those hazards that exceed an agreed maximum level of risk.

The following are recommended objectives:

1. Identify existing natural and man-made safety hazards, and devise a reasonable assignment of responsibility for their correction or reduction which will be within limits of economic acceptability.
2. Increase public understanding of safety issues so that unnecessary risk may be avoided.
3. Identify any urgently needed implementation measures or new legislation.
4. Set safety goals consistent with the goals of other elements of the Burlingame General Plan.

B. Legal Basis

1. State Planning Law

California Government Code Section 65302.1 requires: "A safety element for the protection of the community from fires and geological hazards including features necessary for such protection as evacuation routes, peak load water supply requirements, minimum road widths, clearances around structures, and geologic hazard mapping in areas of known geologic hazard."

2. CIR Guidelines

The legislature in 1972 directed the Council on Intergovernmental Relations to draft advisory guidelines for General Plan Elements. The most pertinent excerpt from G.C. Section 3421.1 reads:

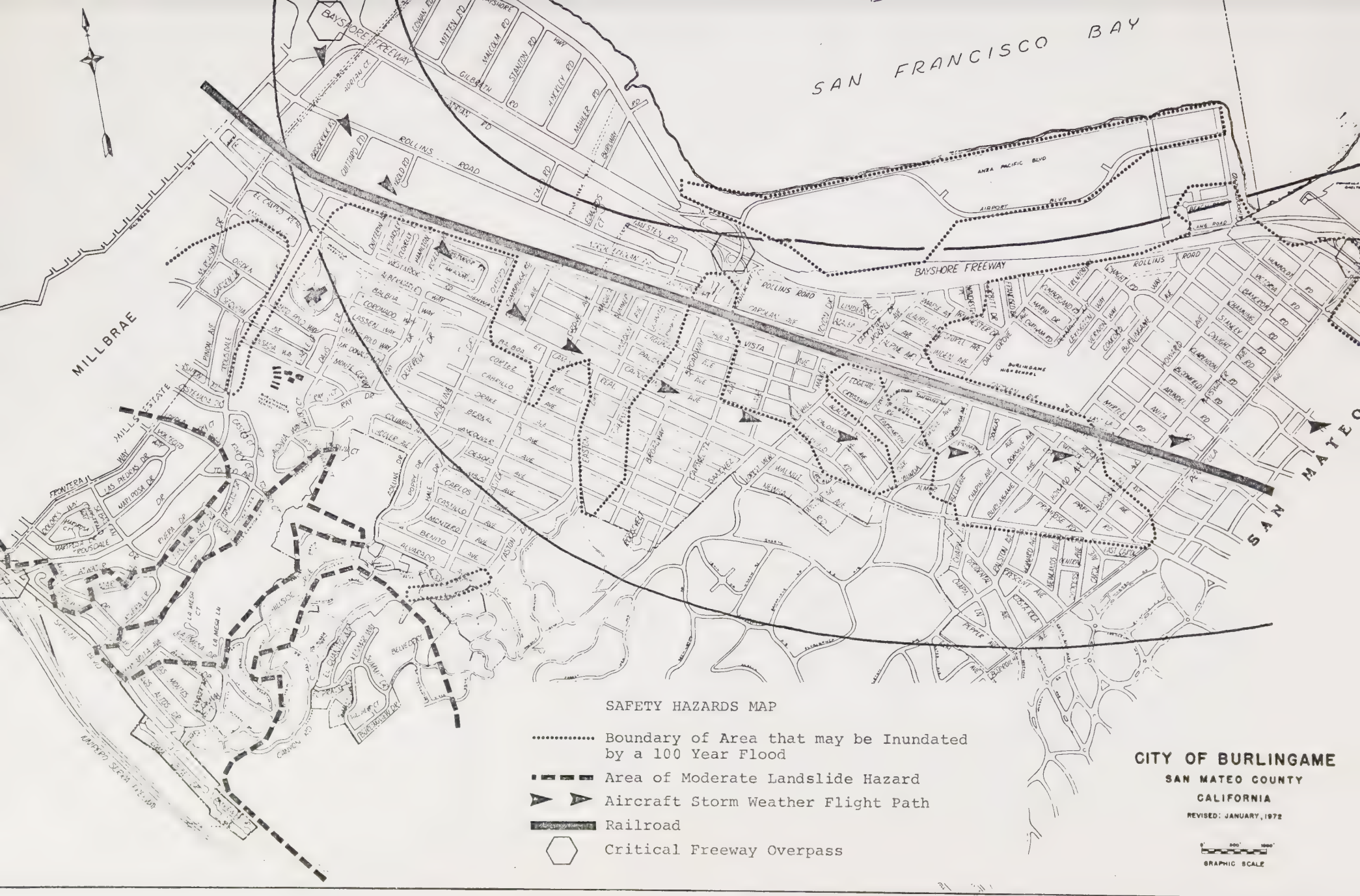
"In connection with its responsibilities under Section 3421.1, the Council shall develop and adopt guidelines for the preparation and content of the mandatory elements required in city and county general plans by Article 5 (commencing with Section 65300) of Chapter 3 of Title 7."

C. Summary of Findings

1. Fire hazards in Burlingame can be rated as "minor." Life loss potential is also slight, concentrated in older multi-story dwellings and apartments.
2. The City's three existing fire stations provide good geographic coverage. Numbers of full time, trained Fire Department personnel are higher than average for California cities of equivalent population and properties to be protected.
3. Emergency communications are good, both for citizens reporting fires and between staff within the council. Burlingame is one of the few cities which has complete coverage by a street fire alarm box system.
4. Burlingame participates in a County-wide Mutual Aid Program for large scale fires and related emergencies.
5. There is a hazard from extensive, shallow flooding in the lower areas of the City, given high tides and strong winds or power interruption to pumping stations.
6. A minor hazard from local flooding presently exists along the principal drainage channels in the Millsdale Industrial Park, and along several of the creeks that cross the alluvial areas of the city.
7. Although the city water system is rated by the Insurance Services Offices as a class two system, there are some concerns with it. A major earthquake could leave the city with only one day's supply of potable water. Fire fighting requirements could deplete this reserve to a negligible quantity within hours, leaving residents without a dependable source of drinking water. Repairs and replacements are not being made within the context of a master water scheme and agreed priorities. A consulting engineering study is to investigate these concerns in 1975-76.
8. Historically, Burlingame has experienced few landslides. Soil instability will probably be confined to limited areas of the western hills already known to be unstable.
9. Expansive soils underlie several districts of the city, and pose a hazard to many buildings. Soil instability and subsidence in these areas pose additional potential problems.
10. Procedures that would allow the city to respond promptly in the event of nuclear attack or a civil disturbance are described in the present emergency operations plan. Other natural disasters are treated only in outline form, and could be usefully reviewed.

D. Major Recommendations

1. Older high rise buildings and buildings with extensive floor areas require a greater degree of built-in fire protection.



2. Present state law requires that all new dwellings and multi-dwelling units be protected with smoke activated fire alarm devices. The desirability of a municipal ordinance extending this requirement to existing structures, especially apartments and hotels, should be reviewed.
3. There are large sections of the city that have combustible roofs which, under a combination of adverse conditions, could cause a major catastrophic fire. Requirements for fire-resistive roofing, perhaps on a replacement basis, warrant further study.
4. Review dyke levels along drainage channels in the industrial area; recommend minimum acceptable elevations, and prepare cost estimates for the required work.
5. Consider preparation of a 100 year flood protection plan in compliance with Federal requirements. Secure from Federal Insurance Agency an updating of federal flood prone area map.
6. A study of the city's water system should be made, and a master plan prepared which will identify priorities for future improvements. This could be accomplished by the consulting engineering study agreed for 1975-76.
7. The practicality of connections to the Millbrae and San Mateo water systems for emergency supplies should be reviewed, together with the reactivation of older wells within Burlingame that are presently capped.
8. The public health dangers inherent in a breakdown of the City's sewer system should be estimated, and steps taken to reduce risks from pollution of the water supply system and San Francisco Bay.
9. Hazards in the hill areas from potential future earth and mud slides should be evaluated.
10. The City's present emergency operations plan should be supplemented with a program of priorities for restoring public services and utilities, conducting rescue operations, and clearing emergency travel routes.

II. BACKGROUND

A. Area Covered

This Safety Element is focused on the City of Burlingame, with recommendations directed to local responses. It is recognized, however, that many of this city's natural and man-made hazards are common to other urban areas of the San Francisco Peninsula.

The broader context of safety issues is reviewed in the Countywide Seismic Safety-Safety Element, which describes many common hazards and helps establish the context for the issues and implementation programs described in this report.

B. Factors Considered

Concern for public safety involves many issues. The principal ones identified in this element are fire, flooding, non-seismic ground failure, landslides and mudslides. To the limited extent that data is available an analysis will be made of hazards likely to induce or be induced by a breakdown of essential public services and utilities. The City's present Emergency Operations Plan will also be reviewed.

The principal public safety issue not considered in this element is the role of law enforcement agencies, and the crime prevention aspects of land use development - such as planning for "defensible space." State guidelines declare this issue as optional, and it is considered that it could only be included in a superficial way in this first draft of Burlingame's Safety Element. It is the City's intention to review this topic during the coming year and to prepare findings and recommendations for inclusion in a future amendment of this report.

C. Information Sources

In addition to the County of San Mateo's study of regional safety hazards, this element has drawn on a report prepared by Gage-Babcock & Associates, Inc. for the Local Agency Formation Commission of San Mateo County. The report presents detailed findings on fire hazards and fire protection throughout the County, including assessments of life and property loss potentials, available fire suppression services, fire insurance gradings and recommendations for priority improvements.

The Burlingame Fire Department contributed a useful report on local conditions, with an evaluation of priorities and a suggested fire safety improvement program. Other safety issues - flooding, drainage and water supply - were outlined in a report prepared by the Public Works Department, based on engineering records and experience.

This first safety element of the Burlingame General Plan highlights the more obvious and known safety hazards. Additional studies will be necessary to produce a more comprehensive and thoughtful evaluation.

III. SAFETY HAZARDS

A. Fire

Fire hazards in Burlingame are moderate to slight. Large property loss potentials are considered to be less than the County average, with most industries of the "clean" type and only small to moderate size. Many potential problems are offset by installed automatic protection systems. Life loss potential is also below the County average, concentrated in older multi-story apartment buildings.

While the City's more serious fires are likely to occur in the industrial area, the commercial areas and the older apartment districts, a great number of smaller fires occur in single family homes. Recognizing this as a general

pattern, a recent State law requires that all new dwelling units - single family homes as well as apartments and condominiums - must be protected with smoke activated fire alarm devices.

The Burlingame Fire Department has an enviable record of public service. Their role and performance has been commendable. The City Council, since Burlingame's incorporation in 1908, has placed the problem of fire protection high on its priority list. The results to date are:

1. Three well located, well equipped fire stations.
2. Fire fighting apparatus and equipment of modern design, well maintained by Fire Department mechanics.
3. Complete city coverage by a street fire alarm box system.
4. Well trained personnel, capable of efficient operation. There is also a Cadet and Auxiliary Program that assures the Department of additional personnel in major emergencies.
5. The Department participates in a County-wide Mutual Aid Program for large scale emergencies, and supplements this with Automatic Aid if required.*
6. A well established fire prevention program is in continuous operation.

Burlingame ordinances and laws relating to fire protection and prevention are more advanced than 90% of the cities on the San Francisco Peninsula. However, for older high rise buildings without sprinkler systems and buildings with extensive floor areas, city codes should be reviewed to assess the need for a greater degree of built-in fire protection. This is important for two reasons: one, increased life and property protection; and two, cost savings in Fire Department operations.

It is of interest to note that while total costs of operating a fire service have increased over the past fifteen years, measured in "current" dollars, the actual costs measured in "constant" (inflation discounted) dollars have been nearly stable. This is likely to change: amendments made by the 1974 Congress to the Federal Fair Labor Standards Act will gradually reduce firemen's allowable duty hours, and require an increase in personnel from the present average of 3.50 to between 4.20 and 5.25 to keep one fireman on duty. This highlights the need to look at the alternative of improved built-in fire protection in both new and certain older buildings rather than continuing to rely heavily on manual firefighting.

When fire does occur, an adequate supply of water is essential. Although Burlingame's water system is rated by the Insurance Service Offices as a Class 2 system, there are some concerns with it. A detailed study should be made of its capacity and its vulnerable aspects. Repair and replacement work should fit into a master water plan, with priorities clearly identified.

* Mutual Aid is a system of agreements worked out between neighboring cities to cover precise situations of mutual assistance. Automatic Aid is an automatic response by the closest fire company regardless of political boundaries or mutual aid agreements.

The City's regional water supply is also at risk. The San Francisco Water Department, which supplies Burlingame with water from an extensive system of reservoirs, has estimated that an earthquake of 6 or more on the Richter scale would so damage their equipment that water to their customer cities on the Peninsula would be shut off for an indefinite period. Burlingame would then face the problem of one day's reserve of potable water, supplemented by three minor wells that presently supply the High School. Fire fighting requirements could deplete this reserve to a negligible quantity within hours.

Hot summer weather and high winds pose another hazard: a general conflagration covering several city blocks. There have been no fires of this type anywhere in San Mateo County in recent history. But the hazard exists, and in certain circumstances could be beyond our Fire Department's ability to bring under immediate control. This hazard exists in large sections of the single family residential districts of the city where combustible roofs predominate.

A related fire hazard exists in the relatively inaccessible Mills Canyon. In dry weather a minor grass fire could possibly spread to trees and then to homes, if not brought under control quickly. The Fire Department is aware of this potential danger, and has a program to spray weed control chemicals in a pattern forming fire breaks throughout the wilderness area.

B. Flooding

Large areas of the Millsdale Industrial Park lie just above the height of the average high tide on San Francisco Bay. Given a higher than average tide and strong winds, these areas are susceptible to extensive but shallow flooding. Properties recently developed in the C-4 District along Bayshore Highway have had their average grade raised and tend to form a modest "seawall." Undeveloped properties have left gaps in this system, and settlement of new fill will gradually reduce the effectiveness of the present barrier. Benefits and costs of completing a seawall system should be prepared, together with a recommendation for the minimum acceptable elevation for future shoreline improvements.

Other sources of flooding in the industrial area are the dykes along the principal drainage channels. Water levels fluctuate with the tide and with storm runoff from the western hills. Inadequate original dyke construction levels, and some settlement, have allowed the minor hazard of local flooding to threaten a number of properties.

Good drainage during storm conditions depends on two additional factors: one, emergency pumping; and two, storm drainage and storage or ponding capacity. Present pumping capacity is modest, and lacks an adequate emergency power source. Ponding capacity is largely limited to the City's "inner lagoon," between Bayshore Freeway and Anza Pacific property. A potential additional area is the 140' wide PG&E right-of-way that runs at a low elevation through the industrial area.

Extensive other areas of the city would be flood prone during the once in 100 year storm.* Existing defenses would likely be overtopped with such a storm, and structures and utilities throughout the industrial district, Burlingame Grove, Villa Park and parts of the original Burlingame Land Company subdivision would be affected. No estimates are available on the likely direct costs from water damage, or the indirect costs from economic disruption.

C. Water Supply and Sewage Disposal

The immediate danger that can occur from an inadequate water supply during a fire has been mentioned already. A second principal hazard is pollution to the supply.

Burlingame buys its water from the City of San Francisco, which pipes it down from the Sierras. Treatment and the major regional reservoir system are the responsibility of San Francisco. With a local reservoir capacity approximately equivalent to only one day's needs, Burlingame's principal function is that of a distributor and retailer. Pollution, if it occurs, will most likely be from faults in the distribution system.

Many of the city's water mains are more than thirty years old, and susceptible to leaks. And while a loss of water is an annoyance, a more serious problem is the possible penetration into the system of sewage, garden fertilizers and chemicals. Modern more tightly sealed water mains, operated at higher pressure, would reduce this hazard.

Low water main pressures affect the city in another way: they restrict more intensive residential and commercial redevelopment. In a few of Burlingame's older districts, these low pressures jeopardize even those densities permitted by the present Zoning Ordinance and Map.

A third principal hazard with the City's water system is the present unavailability of alternative sources in an emergency. Should the San Francisco Water Department be unable to supply the cities of the Peninsula with water for any period, a major crisis would exist. An alternative source, if only of a temporary nature, is needed. One possible solution was considered ten years ago, when the City had access to nine capped wells. It was agreed that these wells should be refurbished and made ready for emergency supplies. However, no action has yet been taken to implement this decision.

Emergency water supplies to critical facilities also need to be assessed. For example, Peninsula Hospital has only a 15 minute water supply. The Board of Directors has discussed the sinking of two new wells, but financial constraints have prevented the implementation of the idea. Two years ago the Hospital's supply main burst and the City operated water tankers to meet their priority needs until repairs were made. This type of rescue operation could hardly be repeated during a widespread, general disaster.

* Precise limits to areas subject to a flooding hazard are not available. For this report information was abstracted from Lee and Lugo, Flood-Prone Area, U.S.G.S. Water-Resources Investigation 37-73 (Sheet 3). The City recognizes, however, that these are preliminary findings and need to be reviewed on a parcel by parcel basis before any attempt is made to implement a hazard abatement program.

The sanitary sewer system poses equally great hazards. In the older districts of town the system is largely assembled from brittle pipes with rigid joints. Unequal settlement causes leaks. More extreme settlement occurs where the trunk sewers cross Baymud to the Wastewater Treatment Plant. Misalignment could cause sufficient leakage or blockage to constitute a major public health hazard.

D. Geologic Hazards

Landslides are a non-seismic hazard in Burlingame's western hills. Many of the natural factors that promote landsliding, such as steep slopes, poorly consolidated bedrock, and occasionally heavy rainfall, are known to exist in certain areas.

Some recent land developments may have increased the natural hazards; adding structures and fill to marginally stable slopes, removing natural vegetation, improperly handling rainwater runoff or simply watering lawns on unstable slopes will increase the danger of an earth or mud slide. In general, where slopes are steepened or their moisture content increased, a higher landslide potential is created.

An area with a history of landsliding should be of special concern, as most landslide activity seems to recur within or adjacent to such zones. And within sensitive areas, the mitigation of one natural hazard can sometimes increase another. For example, chemical spraying by the Fire Department in the Mills Canyon Wildlife Area to form fire breaks may contribute to erosion, and increase the potential for landslides.

As more specifically set forth in the Seismic Safety Element, soil instability - settlement, liquefaction and expansive soils - is a further hazard. However, incomplete information makes it difficult to establish the extent of the potential problem.

E. Other Disasters

As addressed in the City's Emergency Operations Plan, "disasters" include civil disturbances - bomb threats, sniper fire and riots - and natural emergencies. The more serious natural emergencies have been described in preceding sections of this report.

Civil disturbances are mainly a police function, with defined roles for crowd containment, bomb search and removal, emergency traffic control, and evacuation of endangered areas.

State guidelines declare this to be an optional issue in the Safety Element of a General Plan. It is not proposed that the role of law enforcement agencies and the crime prevention aspects of land use development be included in this first draft. Rather, it is the City's intention to review this topic during the coming year and to prepare findings and recommendations for inclusion in the emergency operations plan and in a future amendment of this Safety Element.

Coordination in time of emergency between City departments and other government agencies and utilities is an additional concern. Responsibility

for solutions to many disasters is presently assigned to non-city agencies. For example, both PT&T and PG&E have full time engineers in their Sacramento O.E.S. offices who take charge when emergencies occur. Both companies have their own plans, are well organized and get plenty of disaster work, especially in the winter.

As a second example, the clearance of principal travel routes in emergencies is the responsibility of the California Highway Patrol. They have plans showing emergency travel routes and check points on all state highways.

The City has little impact on what the above three organizations do in time of disaster. We tell them what is wrong; they go in and take care of it. This presumes our local problems have some priority if there is a widespread disaster, and their men and equipment can be made available. Coordination with parallel City departments is also presumed.

F. Further Studies

Other safety hazards which will receive further study during the coming year are:

1. Broken power transmission lines.
2. Train derailment
3. Airplane crash
4. Fuel spill
5. Fallen trees

IV. CONCEPT OF RISK

In an attempt to give assistance to cities, the Council on Intergovernmental Relations has composed guidelines which may be used in preparing a Safety Element. A central feature of these guidelines is the concept of "acceptable risk."

Acceptable risk is defined as the level of risk below which no specific action by local government is deemed necessary, other than making the risk known and suggesting remedial measures for the public to take if they desire on their own to lessen the risk. In more general terms, the concept means that local government must come to a conclusion concerning the efforts which should be made to reduce a certain hazard.

As a local example, fire resistant roofs are required on Burlingame's public buildings, and in the industrial and commercial districts of the city. Apartments are also subject to the policy. But a single family house can have a roof of wood shingles. This has been considered an "acceptable risk," one taken knowingly by the homeowner, and unlikely to jeopardize others. However, new facts, financial circumstances or Fire Department procedures may cause the Council to judge that such a roof is an "unacceptable risk," and prohibit it by ordinance.

Flooding in the industrial area is another example. Little life loss potential exists; damage has always been limited to modest spoilage and inconvenience. Yet other cities consider any flooding to be unacceptable, and have prepared

dykes and installed pumps to safeguard properties from all but a 100 year storm. The City may decide that extra expenditure on flood prevention is justifiable, and establish a capital improvement item to implement the work over a period of several years.

The many safety hazards identified in the previous section need to be reviewed within the framework of acceptable-unacceptable risk. A policy position is a necessary first step. But a necessary second step is a public commitment to: one, adopt an ordinance to limit private actions; and two, budget for the expenditure of public funds to implement the adopted policy.

V. IMPLEMENTATION

A. Fire

1. Survey older high rise buildings, and recommend ways that owners can provide a greater degree of built-in fire protection.
2. Survey older buildings with extensive floor areas, and recommend ways to increase fire safety.
3. Review desirability of a municipal ordinance requiring smoke activated fire alarm devices in existing buildings; determine types of building to which this should apply.
4. Evaluate existing hazard of combustible roofs in the City's residential areas; if unacceptable, propose ways to reduce the degree of risk.
5. Consider an education program to encourage all homeowners to install home fire detection systems. Consider an ordinance requiring all such systems installed in the city meet National Fire Protection Association standards, and requiring that all vendors and installers be required to obtain a permit before selling or installing such a system.
6. Review pros and cons of more extensive Mutual Aid and Automatic Aid agreements.
7. Consider establishment of a city fire service surtax on structures appreciably below present fire code standards. The assessment should be related to higher Fire Department costs needed for increased service to buildings without built-in protection.
8. Develop a clearly defined Fire Protection Strategy for adoption by the City Council. The report should include: policy statements, strategic objectives and tactical means to prevent, detect and control fires.

B. Flooding

1. Review need for increased protection from high tides and storms on the Bay; estimate benefits and costs.

2. Recommend minimum acceptable elevation for future shoreline improvements; consider means to bring older, lower sites up to this standard.
3. Review dyke levels along the principal drainage channels in the industrial area; recommend minimum acceptable elevations, and prepare cost estimates for the required work.
4. Complete creek drainage works recommended in 1954 Jenks and Adamson report; improvements outstanding:
 - (a) Easton Creek near Easton Drive and Canyon Road
 - (b) Ralston Creek near 1400 Floribunda Avenue
 - (c) Ralston Creek in 1400 block Bellevue Avenue
 - (d) Ralston Creek near 411 El Camino Real
 - (e) Burlingame Creek in 200 block Primrose Road
5. Increase the City's emergency pumping ability with an independent power source; review need for additional pumps.
6. Affirm general policy to maintain PG&E right-of-way as emergency ponding reservoir; consider ordinance to prohibit development incompatible with this policy.
7. Prepare qualitative evaluation of ponding capacity of City's "inner lagoon."
8. Review impact of 100 year flood on Burlingame; consider preparation of plan and estimated cost of improvements to protect property with recommendations to meet situation and satisfy recent Federal requirements.

C. Water Supply and Sewage Disposal

1. Prepare detailed study of City's existing water circulation system; establish trouble points and recommend priorities for any immediate work required.*
2. Review desirability of connections with the cities of Millbrae and San Mateo for emergency supply. Consider wells and alternative sources to temporarily replace City of San Francisco water.
3. Evaluate hazard from failure of the City's two water reservoirs, and the need for emergency power supply for system's two water pumping stations; review need for additional pumping capacity.
4. Reassess hazards from pollution and infiltration of toxic substances into the water supply; recommend ways to reduce these hazards.
5. Evaluate compatibility of densities and maximum height limits presently allowed by the Zoning Ordinance with water system capacities.

* A consulting engineering study is in progress, and a report will be obtained in 1975-76.

6. Review sewerage system capacity and condition; establish trouble points and recommend priorities for improvements.

D. Geologic Hazards

1. Collect and analyze further information on:
 - (a) Alluvium and baymud hazards
 - (b) Liquefaction hazard
 - (c) Landslide and mudslide hazards

E. Other Disasters

1. Prepare a report on safety hazards from potential civil disturbances - bomb threats, sniper fire and riots. Assess planned City response.
2. Investigate the concept of "defensible space;" prepare recommendations for Zoning Ordinance amendments to encourage crime prevention.
3. Review and update the City's Emergency Operations Plan.

F. Further Studies

1. Evaluate present procedures to repair broken power transmission lines; review possible improvements under widespread disaster conditions.
2. Review Fire Department and medical aid response to a train derailment or airplane crash within a residential district of the city.
3. Assess the life loss and property loss hazards from a fuel or chemical spill on city streets; if the hazards are unacceptable, propose ways to reduce them.
4. Evaluate the hazard from older, larger trees under storm conditions.

SCENIC ROADS AND HIGHWAYS ELEMENT
OF THE GENERAL PLAN
FOR THE CITY OF BURLINGAME

PLANNING COMMISSION

Thomas W. Sine, Chairman
Jules L. Francard
Ruth E. Jacobs
Everett K. Kindig
Charles W. Mink
E. L. Norberg
Thomas C. Taylor

CITY COUNCIL

Irving S. Amstrup, Mayor
William J. Crosby
Dorothy Cusick
A. C. Harrison
Victor A. Mangini

Approved by the Planning Commission on July 28, 1975

Adopted by City Council Resolution No. 68-75 on September 15, 1975

I DO HEREBY CERTIFY THAT THIS IS A FULL, TRUE AND CORRECT COPY OF RESOLUTION NO. 68-75 DULY AND
REGULARLY ADOPTED AT A MEETING OF THE CITY COUNCIL OF THE CITY OF BURLINGAME HELD ON SEPTEMBER 15, 1975.

HERBERT K. WHITE, CITY CLERK

BY *Carolyn H. Hill* DEPUTY CITY CLERK

RESOLUTION NO. 68 - 75

ADOPTING
THE SCENIC HIGHWAYS ELEMENT
OF THE BURLINGAME GENERAL PLAN

WHEREAS, California Government Code Section 64302(h) requires that the General Plan include a Scenic Highways Element including the various considerations set forth in said code section, and

WHEREAS, the Planning Commission of the City of Burlingame, after proceedings duly and regularly had as provided by law did, by its Resolution No. 12-75 entitled, "Approving the Scenic Roads and Highways Element of the Burlingame General Plan," adopted July 28, 1975, approve a Scenic Highways Element, and ordered it to be transmitted to the City Council for further proceedings as required by law; and,

WHEREAS, this Council has held at least one public hearing to determine whether it should adopt said Scenic Highways Element as an element of the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

WHEREAS, this Council, after such public hearing at which evidence, both oral and documentary was heard and received, and after due consideration of the evidence and of Resolution No. 12-75 of the Planning Commission approving said Scenic Highways Element, finds that said element, in the form now before the Council, should be adopted;

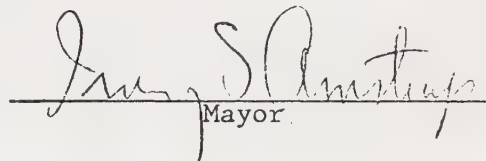
NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF BURLINGAME that:

1. All notices required to be given and all hearings required to be held by Government Code Sections 65351 and 65355

have been given and held in the form and at the time and in the manner prescribed by law.

2. The proposed Scenic Highways Element of the Burlingame General Plan, entitled "SCENIC ROADS AND HIGHWAYS ELEMENT OF THE GENERAL PLAN FOR THE CITY OF BURLINGAME," dated July 28, 1975, is hereby adopted as and for the Scenic Highways Element of the Burlingame General Plan.

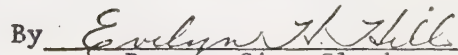
3. The City Clerk be, and he is hereby, ordered to transmit a copy of the Scenic Highways Element of the Burlingame General Plan hereby adopted, together with a certified copy of this Resolution, to the Planning Commission of the County of San Mateo, State of California.


Mayor

HERBERT K. WHITE, City Clerk of the City of Burlingame, does hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 15th day of September, 1975, and adopted thereafter by the following vote:

AYES: COUNCILMEN: Amstrup-Crosby-Harrison-Mangini
NOES: COUNCILMEN: Cusick
ABSENT: COUNCILMEN: None

HERBERT K. WHITE, City Clerk

By 
Deputy City Clerk

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I. INTRODUCTION

A. Purpose

The Scenic Roads and Highways Element is intended to provide for the protection and preservation of attractive views from scenic routes for the enjoyment of the public and to enhance the scenic qualities of Burlingame. The element, consisting of text and a map, is a guide for actions needed to carry out this purpose.

The objectives of maintaining scenic roads and highways are:

1. To retain a system of arterials and local roads that are beautiful and useful to local residents.
2. To harmonize roads and highways with adjacent land use and roadside development.
3. To enhance the traveler's "view from the road."

B. Legal Basis

1. State Planning Law

California Government Code Section 65302(h) requires a scenic highways element as part of a comprehensive long-term general plan for the physical development of the county or city and of any lands outside its boundary which may bear some relation to the planning. The code requirement is as follows:

"The plan shall include a 'scenic highway element for the development, establishment, and protection of scenic highways pursuant to the provisions of Article 2.5 (commencing with Section 260) of Chapter 2 of Division 1 of the Streets and Highways Code.' "

In Section 260 of the Streets & Highways Code the intent of the Legislature is expressed as " . . . in designating certain portions of the state highway system as state scenic highways to establish the State's responsibility for the protection and enhancement of California's natural scenic beauty by identifying those portions of the state highway system which, together with the adjacent scenic corridors, require special scenic conservation treatment. It is further declared to be the intent of the Legislature in designating such scenic highways to assign responsibility for the development of such scenic highways and for the establishment and application of specific planning and design standards and procedures appropriate thereto and to indicate, in broad statement terms, the location and extent of routes and areas requiring continuing and careful coordination of planning, design, construction, and regulation of land use and development, by state and local agencies as appropriate, to protect the social and economic values provided by the State's scenic resources."

Section 263 of the Code includes Route 280 from Route 17 in Santa Clara County to Route 80 near First Street in San Francisco as a portion of the State Scenic Highway System.

Furthermore, Section 154 of the Code provides that the State Department of Transportation shall encourage the development of County Scenic Highways when such county highways meet prescribed standards for official scenic highways. When properly approved as County Scenic Highways these routes may be included on maps and other publications. As of this time the County of San Mateo is preparing a Scenic Roads Element of the San Mateo County General Plan.

2. CIR Guidelines

The Legislature in 1972 directed the Council on Intergovernmental Relations to draft advisory guidelines for General Plan Elements. These guidelines indicate the scenic highways element is the initial step leading toward official designation as a scenic highway.

Consideration may be given to special features such as city entrances, bayfront arterials and important natural or landscaped and beautified arterials. Inclusion of bike paths within a scenic highway corridor may also be considered.

The guidelines suggest identification of scenic corridors, policies and programs to enhance and protect them.

C. Scope and Nature

The primary emphasis of the Scenic Roads and Highways Element is on the designation of state highway routes as "scenic" routes. The County of San Mateo Scenic Road Element recognizes the importance of a system of scenic roads throughout both rural and urban areas. There are many other scenic roads within the City of Burlingame and surrounding areas that offer pleasant visual experiences. All scenic routes merit protection.

D. Relationship to Other Elements

The Scenic Roads and Highways Element relates directly to the open space and the circulation element and indirectly to the land use element. It is also related to urban design, beautification, landscaping, street trees and review of signs and buildings.

II. BACKGROUND

A. Area Covered

The Scenic Roads and Highways Element of the Burlingame General Plan extends beyond the city limits to include adjacent unincorporated territories. The Junipero Serra Freeway Route 280 which is located within the San Francisco PUC Watershed lands is immediately adjacent to the Burlingame city limits at Skyline Boulevard and Trousdale Drive. Burlingame is a portion of the scenic

corridor along the crest of hills west of the urbanized area. This corridor includes Route 280 and Skyline Boulevard, the two lane scenic highway which preceded the freeway.

B. Definition of Terms

Scenic Corridor: The visible land area outside the highway right-of-way and generally described as "the view from the road."

Official State Scenic Highway and Official County Scenic Highway: Scenic highways officially designated by the Scenic Highways Advisory Committee after application from local jurisdictions and only if on list of eligible highways found in Section 263 of the Streets and Highways Code.

Rural Designated Scenic Highway: A route that traverses a defined corridor within which natural scenic resources and aesthetic values are protected and enhanced.

Urban Designated Scenic Highway: A route that traverses a defined visual corridor which offers an unhindered view of attractive urban scenes.

Scenic connector: A segment of a scenic route where abutting properties are commercially or industrially zoned.

C. Information Sources

State Standards for scenic corridor protection: "The Scenic Route - A Guide for the Official Designation of Eligible Scenic Highways"

State Guidelines for scenic highways in urban areas

Scenic Roads Element of the San Mateo County General Plan

Resource Management District Regulations of the County Zoning Ordinance and applicable development review criteria

General Plan for City of Burlingame and Open Space Element

III. SCENIC ROADS AND HIGHWAYS IN BURLINGAME

A. State Scenic Highway Master Plan Designated Routes

Interstate Highway 280 traverses the western edge of the Burlingame Planning area. Because of its location in the established City and County of San Francisco Watershed, these lands are designated as permanent open space. The corridor for this freeway is proposed as an Official State Scenic Highway. In Burlingame only residential and public uses will be permitted to abut the Watershed.

B. County of San Mateo Scenic Roadway

Skyline Boulevard has been designated as an Official State Scenic Highway south from the Half Moon Bay Road Route 92. The link along

Route 92 down to Crystal Springs Lake's and the portion of Skyline Boulevard that extends north from Route 92 to Black Mountain Road might also be designated a Scenic Roadway. From Black Mountain Road north to Trousdale there is a frontage road that includes portions of the route that was previously Skyline Boulevard.

There is one County Scenic Road that permits a loop trip through the City of Burlingame. It is designated on the map. The route follows Skyline Boulevard to Canyon Road, down a narrow winding county road to Easton Drive and via Easton Drive to El Camino Real; then southeasterly out of Burlingame into the City of San Mateo to Crystal Springs Road; and then return to Skyline Boulevard via Crystal Springs Road.

El Camino Real from Easton Drive to Murchison Drive and Skyline Boulevard from Canyon Road to Trousdale deserve the same consideration and protection as other county scenic roads.

C. Other Scenic Routes

There are a number of alternate scenic roads between Skyline Boulevard and El Camino Real that have segments in Burlingame: Chateau Drive, Ralston Avenue, Hillside Drive and Trousdale Drive.

These collector streets are shown as arterials in the adopted Part III General Plan Diagram. It is proposed that the City of Burlingame protect the visual quality of these local roads and the corridors through which they pass.

Actually the last four blocks of Trousdale from Sequoia Drive to California Drive may be called a scenic connector. The abutting property is zoned commercial and it is improved with office buildings and retail stores.

Airport Boulevard is another scenic connector except the portion within Bayside Park and along the shoreline of San Francisco Bay. Other local streets that have scenic qualities worthy of recognition and protection include Occidental Avenue, Ray Drive, Bellevue Avenue, Burlingame Avenue (east of Myrtle) and segments of California Drive.

IV. IMPLEMENTATION GUIDELINES

A. Scenic Highways

1. The City of Burlingame recommends that Interstate Highway 280 be designated as a State Scenic Highway, because of the beauty of the countryside through which it passes, and because of the relative sensitivity and skillfulness of its design.
2. El Camino Real, state highway Route 82, is a scenic highway where views from the road are contained. The Burlingame portion of

this historic road is lined with huge elm and eucalyptus trees that form a tunnel of foliage. These heritage trees give Burlingame a distinctive image. The segments of El Camino Real where abutting property is zoned first commercial are defined as scenic connectors. Commercial buildings and signs along El Camino Real should receive design review and satisfy all municipal codes. Trim abutting properties along the road provide a scenic character and add to the Burlingame image.

3. Except where traffic hazards might be created, median strips, traffic islands, and excess highway rights-of-way should be landscaped.

B. Scenic Roads

4. The County of San Mateo proposes the loop via Skyline Boulevard, Canyon Road, Easton Drive, El Camino Real and Crystal Springs Road back to Skyline Boulevard be designated a County Scenic Roadway and part of the proposed Scenic Road System.
5. Explore fully all practicable regulatory approaches intended to protect views along scenic highways and Burlingame's scenic routes.
6. Consider a program to provide appropriate identification for Burlingame's scenic routes: highways and roads for motorists; routes, lanes and separate paths for bicyclists.

C. Enhancement

7. Utility lines should be undergrounded wherever possible; and sensitively sited where placement must be aboveground.
8. Plant materials should be used to screen or hide objectionable views.
9. A design study should be prepared to include a San Francisco Bay viewscape plan for Airport Boulevard from Broadway to Coyote Point Drive.
10. An integrated plan for hiking, riding and bike trails should be coordinated with the scenic road system. Plan for separate bike paths to be constructed along scenic road and highway routes whenever and wherever economically feasible, reasonable and practical.
11. Previously adopted General Plan Elements express as public policy the other actions needed to help carry out this Scenic Roads and Highways Element.

NEGATIVE DECLARATION OF THIS PROJECT

The City of Burlingame does not have an adopted Scenic Highways Element of the General Plan. The adoption of this element will, of its self, have no environmental impact on the City or its surroundings. Adoption of the Scenic Roads and Highways Element of the General Plan will provide policies and guidelines for protecting attractive views from scenic highways and scenic routes in and adjacent to the City of Burlingame.

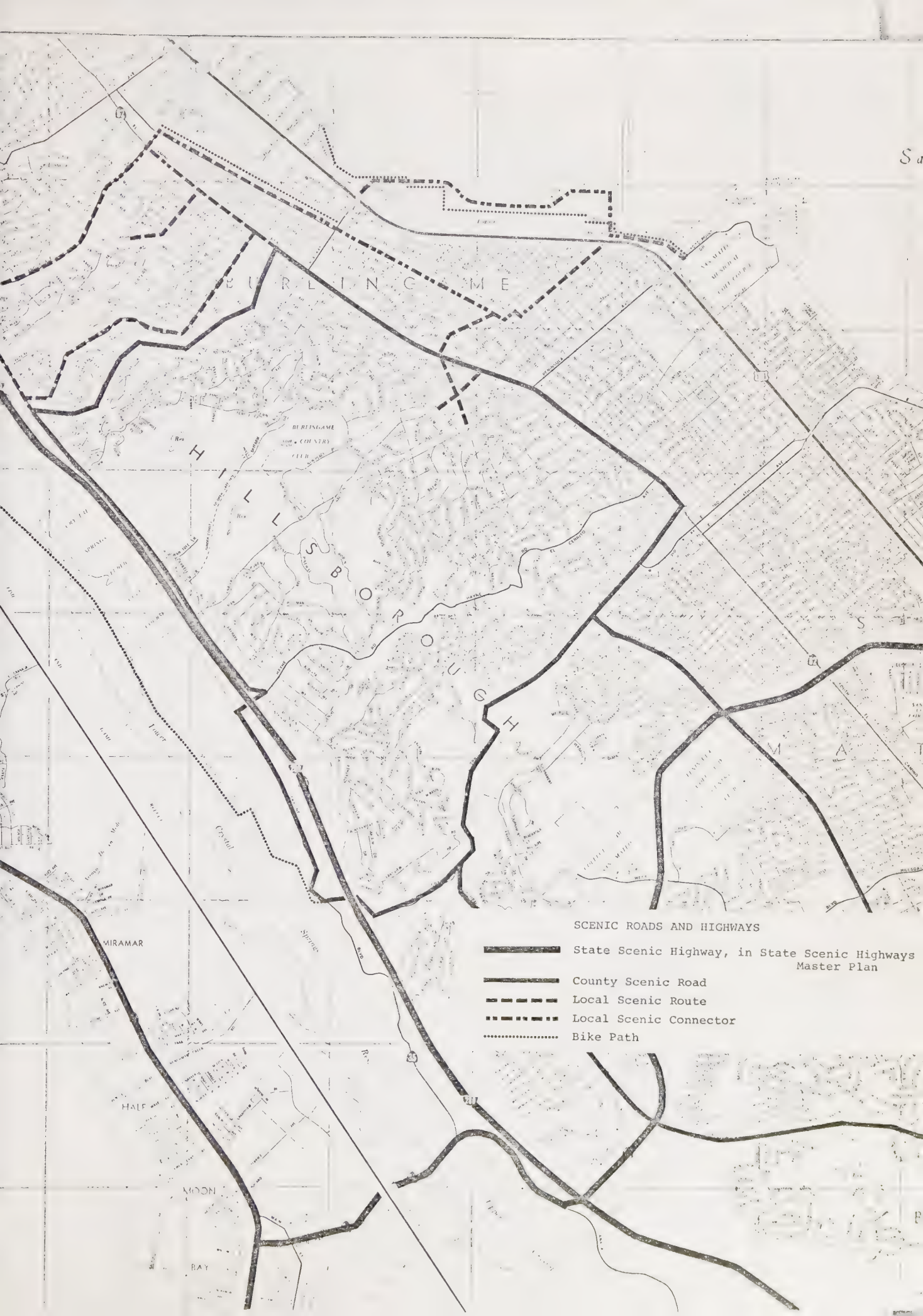
COUNTY OF SAN MATEO
STATE OF CALIFORNIA
1973

PROPOSED SCENIC
ROAD SYSTEM
PLANNING DEPARTMENT



- PROPOSED COUNTY SCENIC ROADS
- - - IN STATE SCENIC HIGHWAYS MASTER PLAN
- OFFICIALLY DESIGNATED STATE SCENIC HIGHWAY

SCALE OF MAP 1 INCH = 15,000 FEET



SCENIC ROADS AND HIGHWAYS

-  State Scenic Highway, in State Scenic Highways Master Plan
-  County Scenic Road
-  Local Scenic Route
-  Local Scenic Connector
-  Bike Path



NOISE ELEMENT
OF THE GENERAL PLAN
FOR THE CITY OF BURLINGAME

PLANNING COMMISSION

Thomas W. Sine, Chairman
Jules L. Francard
Ruth E. Jacobs
Everett K. Kindig
Charles W. Mink
E. L. Norberg
Thomas C. Taylor

CITY COUNCIL

Irving S. Amstrup, Mayor
William J. Crosby
Dorothy Cusick
A. C. Harrison
Victor A. Mangini

Approved by the Planning Commission on September 8, 1975

Adopted by City Council Resolution No. 69-75 on September 15, 1975

RESOLUTION NO. 69-75

ADOPTING
THE NOISE ELEMENT
OF THE BURLINGAME GENERAL PLAN

I DO HEREBY CERTIFY THAT THIS IS A FULL, TRUE AND CORRECT COPY OF RESOLUTION NO. 69-75 DULY AND
REGULARLY ADOPTED AT A MEETING OF THE CITY COUNCIL OF THE CITY OF BURLINGAME HELD ON SEPTEMBER 15, 1975.

HERBERT K. WHITE, CITY CLERK

BY *E. G. G. G. G.* DEPUTY CITY CLERK

WHEREAS, California Government Code Section 64302(g) requires that the General Plan include a Noise Element including the various considerations set forth in said code section; and

WHEREAS, the Planning Commission of the City of Burlingame, after proceedings duly and regularly had as provided by law did, by its Resolution No. 14-75 adopted September 8, 1975, approve a Noise Element and ordered it to be transmitted to the City Council for further proceedings as required by law; and

WHEREAS, this Council has held at least one public hearing to determine whether it should adopt said Noise Element as an element of the General Plan, notice of which hearing was given at the time and in the manner required by Government Code Section 65351; and

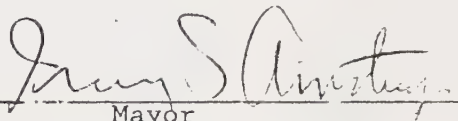
WHEREAS, this Council, after such public hearing at which evidence, both oral and documentary was heard and received, and after due consideration of the evidence and of Resolution No. 14-75 of the Planning Commission approving said Noise Element, finds that said element, in the form now before the Council, should be adopted.

NOW, THEREFORE, IT IS HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF BURLINGAME that:

1. All notices required to be given and all hearings required to be held by Government Code Sections 65351 and 65355 have been given and held in the form and at the time and in the manner prescribed by law.

2. The proposed Noise Element of the Burlingame General Plan, entitled "NOISE ELEMENT OF THE GENERAL PLAN FOR THE CITY OF BURLINGAME," dated August 25, 1976, the addendum dated September 3, 1975, and the amendment thereto adopted by Planning Commission Resolution No. 14-75, is hereby adopted as and for the Noise Element of the Burlingame General Plan.

3. The City Clerk be, and he is hereby, ordered to transmit a copy of the Noise Element hereby adopted, together with a certified copy of this Resolution, to the Planning Commission of the County of San Mateo, State of California.

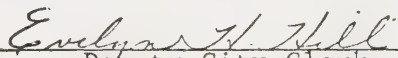


Mayor

HERBERT K. WHITE, City Clerk of the City of Burlingame, does hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 15th day of September, 1975, and adopted thereafter by the following vote:

AYES: COUNCILMEN: Amstrup-Crosby-Cusick-Harrison-Mangini
NOES: COUNCILMEN: None
ABSENT: COUNCILMEN: None

HERBERT K. WHITE, City Clerk

By 

Deputy City Clerk

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1. INTRODUCTION AND SUMMARY

Legal Basis and General Objectives

California State Government Code Section 65302(g) requires a noise element of all city and county general plans. This code section requires that the noise element be expressed in quantitative terms, showing contours of present and projected noise levels associated with all existing and proposed major transportation elements. The sources of environmental noise considered in this analysis shall include, but are not limited to, the following:

(i) highways and freeways, (ii) primary arterials and major local streets, (iii) passenger and freight on-line railroad operations and ground rapid transit systems, (iv) commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation, (v) local industrial plants, including, but not limited to, railroad classification yards, and (vi) other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

The scope and nature of noise elements are outlined as follows by the California Council on Intergovernmental Relations.

- A statement of general policy indicating the local jurisdiction's general intentions regarding noise and noise sources in the community.
- Desired maximum noise levels by land use categories.
- Standards and criteria for noise emissions from transportation facilities. (It should be noted that control of some noise sources has been pre-empted by State and Federal governments.)
- Standards and criteria for compatible noise levels for local 'fixed point' noise sources.
- Guide to implementation.
- Appendix describing methodology of preparation and sources of data.

The three main purposes of the Burlingame Noise Element deal with noise control in planning, surveillance and enforcement actions. With regard to planning, the objective of the Noise Element is to present noise level criteria which future planning, zoning and building inspection processes can utilize to promote maximum compatibility of land uses and activities. With regard to surveillance, the Noise Element should determine the present noise climate in Burlingame, predict the noise climate for 1990, and determine what surveillance (monitoring) is necessary to assure that noise levels do not increase. Additional surveillance may be needed with regard to specialized noise sources such as the San Francisco International Airport. With regard to enforcement, the Noise Element should determine which enforcement programs are best suited to the City of Burlingame; that is, where Burlingame should apply its police powers to have the most beneficial impact on its noise climate.

The Element begins with a background section which is followed by a description and analysis of existing and future acoustic conditions in the City; a measurement program was conducted to quantify the existing noise climate. This description is followed by Section Four which sets forth suggested planning criteria and standards. Section Five follows with a description of a wide range of noise abatement and control programs available to the City. Finally, Section Six recommends goals, policies and implementation programs thought appropriate for Burlingame considering its present and future noise climate, its General Plan and its citizen interests.

Summary of Findings

The City of Burlingame is highly impacted by noise from five major traffic arteries - Bayshore Freeway, Southern Pacific Railroad, California Drive, El Camino Real and the Junipero Serra Freeway. While airport noise most acutely impacts industrial and commercial land uses, it also affects residential areas adversely. During worst case months in the winter and early spring, airport noise severely impacts many residential areas. Residential and public facilities (schools, parks, hospitals) land uses adjacent to the City's

major traffic arteries are highly impacted by noise with the area adjacent to Bayshore Freeway being impacted to the greatest degree. Noise in these areas immediately adjacent the arterials is unacceptable from both a hearing conservation and land use compatibility standpoint. Noise levels in commercial areas are generally acceptable except in those areas immediately adjacent to major traffic arteries. Noise levels in industrial areas are generally acceptable.

Major Recommendations

In order to attain acceptable noise levels in the future, the following programs are recommended.

- Administrative Review Process - Existing City processes involved with environmental impact review and building plan check, permit and inspection should be altered to include specific noise level planning criteria. Proposed new construction projects and major remodeling projects should be required to conform to specific noise provisions of the State Housing Act; this will require acoustical analysis in many cases.
- Airport Noise Surveillance Program - A two to three year monitoring program is recommended to record especially the worst case noise in Burlingame from the airport. This program would specifically monitor the noise caused by aircraft flights over Burlingame during adverse weather conditions.
- Vehicle Noise Emission Standards Enforcement - An enforcement program should be undertaken to assure that State vehicle noise emission standards are being met by motor vehicles on Burlingame's streets.
- Municipal Vehicle and Maintenance Operations Control, Educational Campaign, Noise Ordinance, and Bayshore Freeway Noise Attenuation Study - are other programs recommended in the Noise Element; it is recommended that any domestic animal noise ordinance program be deferred until San Francisco's recent experience with such a program can be monitored and assessed.

Area Covered

The City of Burlingame is located in northern San Mateo County approximately 16 miles southeast of San Francisco. The City's close proximity to San Francisco and its airport together with the fact that many of its residential buildings are more than 40 years old or predate the airport has brought pressures for increased density in many parts of the City and for commercial development along the waterfront near the airport. In future years, some parts of the City will be developed for the first time and other parts of the City will be redeveloped at higher densities. This Noise Element of the General Plan will help to assure that future development will be carried out so as to promote a quieter Burlingame. The entire City was monitored to determine its present noise climate. Measurement sites covered (i) all of the major sources of noise in Burlingame - motor vehicles, aircraft and stationary sources, e.g. car washes, (ii) all of the receptor land uses of noise - residential and public facility (parks, hospitals, schools) land uses, commercial land uses, and industrial land uses.

Factors Considered

The Community Noise Equivalent Level (CNEL) measurement descriptor was chosen most appropriate to the City of Burlingame; this technique weights (or penalizes) evening (1900-2200) and nighttime (2200-0700) noise more heavily than daytime (0700-1900) noise to account for the greater annoyance caused by noise during these periods. In addition to accounting for the diurnal variation of noise, the choice of this CNEL descriptor also permits comparison with airport CNEL contours developed by the San Francisco International Airport. Other factors taken in account in the production of the CNEL contours are vehicle volume and mix (day, evening and night), average speed, pavement width, vehicle flow characteristics, and topography. The effect of buildings as noise barriers was not taken into account in contour production. Development of the planning criteria and implementation sections of the Noise Element involved consideration of many factors - the Burlingame General Plan, citizen interests (as indicated by the Burlingame Noise Questionnaire), present and future acoustic conditions, and current governmental rulings and information on noise-related matters. A bibliography on sources of information relating to the various aspects of noise is provided in Appendix A.

3. EXISTING AND PROJECTED ACOUSTIC CONDITIONS.

In order to arrive at city-wide goals and determine acceptable land uses which will provide a pleasing acoustic environment for members of the community, it is necessary to identify present acoustic conditions and to attain some knowledge of probable future conditions. This was achieved by taking actual measurements of ambient noise in Burlingame and by the application of a noise propagation model to predict the noise climate for the years 1975 and 1990. A more complete description of the methodology used is given in Appendix B, although a brief description is included in the two following sections.

3.1 Existing Acoustic Conditions.

In order to determine the existing Community Noise Equivalent Level (CNEL) in Burlingame and to characterize spatial and temporal variations, 52 sound level measurements were made. Measurements were made during rush hour, midday, evening and night and on both weekday and weekend. The Community Noise Equivalent Level is expressed in decibels on the A-weighting scale (dBA) and weights evening noise (1900-2200) three times as much as daytime noise (0700-1900) and nighttime noise ten times as much as daytime noise. Thus, this weighting of evening and nighttime noise purposely causes CNELs to appear higher than actual evening and nighttime measurements are; this is done to account for increased annoyance and activity interference caused by noise during the evening and nighttime periods. The measurement sites were chosen so as to represent a variety of land uses and zoning types, including residential, commercial, industrial, school, hospital, parks and open space areas; 15-minute samples were collected.

The sound level acquisition system used was a Bruel and Kjaer Model 166B/S45 Environmental Noise Classifier. This noise monitoring instrument registers the time during which noise was measured in 12 different noise level ranges as well as the total time of the monitoring sample. The output is a digital readout which is recorded manually in the field. Concurrent

observations of meteorology, traffic and noise source characteristics were made. The instrument was calibrated before each sampling period.

The A-weighting network was used for all measurements. This network modifies sounds in the same way as the human ear does, and noise measured on this scale (the dBA scale) correlates well with human annoyance. The dBA unit is the one most commonly used in describing all types of community noise sources. In addition, most laws and ordinances pertaining to noise from highway and stationary sources are expressed in terms of dBA. Table 3-1 shows typical dBA levels for common noise sources.

The 52 samples, each of 15 minute duration, were taken at 36 different locations in Burlingame; 15 minutes is considered to be a sufficient time period for a statistically valid representation of both constant noise and noise sources such as traffic streams. Total traffic volume and truck counts were noted, as well as vehicle speed estimates. The measurement sites are shown graphically in Figure 3-1.

To obtain estimated CNEL values for all of the measurement locations, five locations were chosen as representative of the various noise sub-climates in the City and the different land uses upon which they occur; the location of these sites is also indicated on Figure 3-1. For industrial land uses, the representative measurement site chosen was along Old Bayshore Highway between Malcolm and Mitten streets. This site was chosen for three purposes: (i) it is representative of industrial land use noise, (ii) it is representative of airport-generated noise which impinges on the majority of the industrially zoned area of Burlingame, and (iii) it is an area which the Burlingame General Plan indicates for future development as waterfront commercial. For commercial land uses, the representative measurement site chosen was along El Camino immediately west of its intersection with Primrose and Bayswater. This site was chosen (i) because of its location near El Camino Real - representative of the many well-travelled streets which traverse all commercial areas in the City, (ii) because of its close proximity to the downtown commercial area and the traffic entering and exiting this area.

As residential land uses are the most sensitive land uses with regard to

Table 3-1. Typical Sound Levels for Common Noise Sources in dBA.

Overall Quality	dBA	Outdoor	Indoor
Uncomfortably loud	130	50-horsepower siren at 100 feet	-
	120	Jet take-off at 200 feet	-
	110	-	Rock-n-roll band
Very loud	100	Jet flyover at 1000 feet, power mower	Newspaper press
	90	Motorcycle at 25 feet	Food blender
Moderately loud	80	High urban ambient sound; passenger car, 65 miles per hour at 25 feet	Garbage disposal, clothes washer
	70	-	TV audio, vacuum cleaner
	60	Air conditioner at 20 feet	Electric typewriter, conversation
Quiet	50	Light traffic at 100 feet	Average residence
	40	Bird calls, lower limit urban ambient sound	-
Very quiet	30	-	Soft whisper
Just audible	20	-	Television studio, leaves rustling
	10	-	-
Threshold of hearing	0	-	-

Table 3-2. CNEL Noise Measurements at Five Locations Representative of Burlingame's Noise Sub-Climates.

Site Measure- ment No.	Site Description	L _{day} / Levening/ L _{night}	Computed CNEL
10 24 45	<u>Airport Industrial</u> - Old Bay- shore Highway between Malcolm and Mitten	L _d - 68.4 L _e - 68.4 L _n - 65.4	73
33 12 15	<u>Arterial Commercial</u> - El Camino Real West of Primrose	L _d - 68.2 L _e - 68 L _n - 65.9	73
35 27 14	<u>Quietest Residential</u> - Devereux Dr. south of Balboa at Abraham Lincoln School	L _d - 58.8 L _e - 47.2 L _n - 54.7	62
28 46 47	<u>Airport Residential</u> - Trousdale Drive north of Sebastian	L _d - 63.2 L _e - 59.5 L _n - 60.7	68
20 25 48	<u>Freeway Residential</u> - Bayshore Blvd. at its intersection with Trenton and Dwight	L _d - 73.4 L _e - 73.7 L _n - 70.0	76

Note: L_{day} (L_d), L_{evening} (L_e) and L_{night} (L_n) are Leqivalent (Leq) measurements taken during the day (0700-1900), evening (1900-2200) and nighttime (2200-0700) periods.

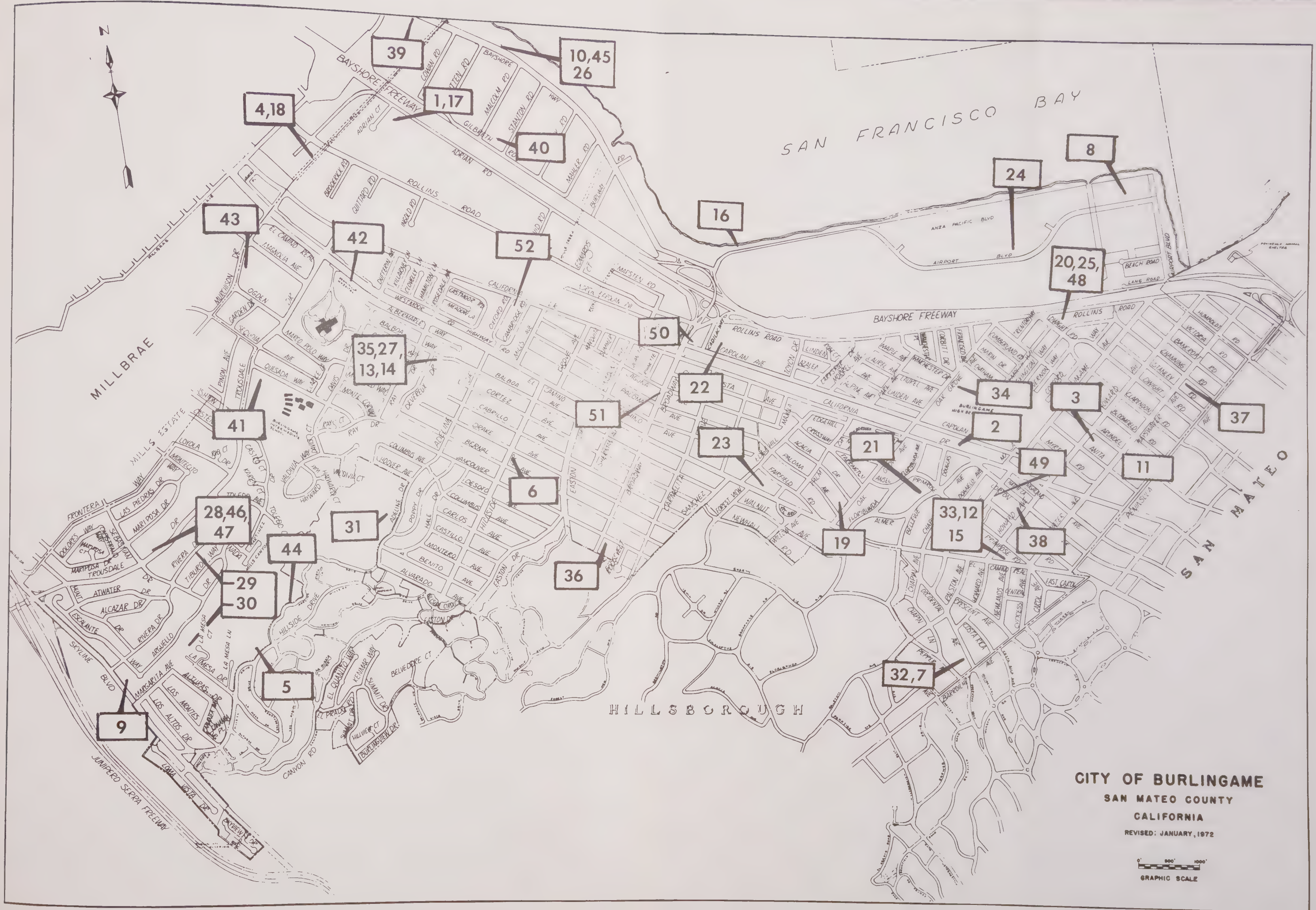


Figure 3-1.
 Noise Measurement Sites

noise intrusion, three separate measurement sites were chosen to represent different residential areas. Noise intrusion into residential areas of Burlingame takes three forms - little outside intrusion, intrusion from Bayshore Freeway--from traffic arterials, and from aircraft noise. Along Bayshore Boulevard adjacent to Bayshore Freeway, a measurement site was chosen at its intersection with Dwight Road and Trenton Way. This is the residential area in Burlingame which is most affected by freeway noise. Along Trousdale Drive, a measurement site was chosen north of Sebastian Drive in order to represent residential areas in Burlingame affected by airport noise; this site is located within the 65 CNEL contour in the Airport Land Use Commission's adopted Interim Airport Land Use Plan. It should be noted that this area is not located within the 65 CNEL contour in the latest EIAR published by the San Francisco International Airport. A third measurement site was chosen on Devereux Drive near its intersection with Balboa Avenue. This measurement was taken at Abraham Lincoln School and is representative of those residential areas which are not affected by noise generated outside the area - that is, by noise on an arterial street such as El Camino Real, Peninsula Avenue, etc.

Table 3-2 presents the results of the actual CNEL measurements taken at these five representative sites. The computed CNEL values on this table illustrate the range of noise levels found near various roadways and other noise sources. The CNEL levels are related to land use and Federally recommended levels in Section Four of this report. To summarize, the freeway residential area is presently at an exterior noise level which the U.S. Environmental Protection Agency (EPA) considers harmful to health. The industrial and commercial areas are not substantially quieter. Only the quietest residential noise levels measured are presently within CNEL levels recommended for single family living. Utilizing the L evening and L night values from these representative measurement sites, the CNEL was estimated for the remainder of the sites which were monitored during the day. Table 3-3 presents the results of all the 15 minute roadway noise measurements, including the day, evening, or night average noise level (L_d , L_e , L_n) for the period measured, the L_{10} and the estimated CNEL.

The 52 measurements just described were next utilized to validate a computer model; the validated model then was used to predict noise propagation.

Table 3-3. Results of 15-minute Roadway Noise Measurements including estimated CNEL.

Site Measurement Number	Site Description: Land Use	Levelling L ₁₀	Measured L ₁₀	Estimated CNEL	Time of Measurement
1	Adrian Road east of Adrian: Industrial	67.2	72.5	72	3:55-4:10 p.m.
2	California between Douglas and Sellowue Commercial	67.9	71.8	73	3:48-4:03 p.m.
3	Howard Avenue at Washington School: Public Facility/Residential	64.1	68.2	64	4:20-4:35 p.m.
4	Rollins Road between Mills Creek and Railroad tracks: Industrial	67.1	72	73	3:30-3:45 p.m.
5	Hillside Drive west of Adeline: Residential	60.9	64.1	62	9:50-10:05 a.m.
6	Hillside Drive between Bernal and Drake: Residential	61.9	66.3	63	9:17-9:32 a.m.
7	Occidental Avenue between Howard and Barroillet: Residential	62.1	65.4	63	11:12-11:27 a.m.
8	Airport Boulevard - east end: vacant commercial	63.3	66.3	72	11:55 a.m. 12:10 p.m.
9	Skyline Boulevard between Margarita and Riviera: Residential	62.9	67.3	63	10:20-10:35 a.m.
10	Old Bayshore Highway between Malcolm and Mitten: Industrial	68.4	72.4	73	1:50-2:05 p.m.
11	Peninsula Avenue between Arundel and Bloomfield: Residential	66.4	70.7	65	12:30-12:45 p.m.
12	El Camino Real West of Primrose: Commercial	68 *	70 *	73	9:11-9:26 p.m.
13	Devereux Drive south of Balboa at Abraham Lincoln School: Public Facility, Residential	55.7 *	58.4 *	62	9:45-10:00 p.m.
14	same as number 13	54.7 **	57.4 **	62	10:35-10:50 p.m.
15	El Camino Real west of Primrose: Commercial	65.9 **	68.9 **	73	11:10-11:25 p.m.
16	Airport Boulevard - eastern end: Vacant commercial	69.7	70.3	73	12:17-12:32 p.m.
17	Adrian Road: Industrial	72.6	74	74	1:12-1:27 p.m.
18	Rollins Road between Mills Creek and the rail road: Industrial	72.5	73.8	74	1:42-1:57 p.m.
19	Grove Avenue at Coolidge Community Center: Residential	61.8	65.8	63	2:15-2:30 p.m.
20	Bayshore Boulevard at its intersection with Dwight and Trenton: Residential	73.4	75.8	76	2:53-3:08 p.m.
21	Primrose Avenue and Bellvue at City Hall: Commercial	59.6	63.2	62	3:30-3:45 p.m.
22	Carolan Avenue east of Cadillac Way: Industrial	73.2	75.9	74	4:55-5:10 p.m.
23	El Camino Real east of Forest View: Residential	70.5	73.6	73	5:25-5:40 p.m.
24	Airport Boulevard behind Chinese Cuisine: Vacant Commercial	52	55.4	73	6:10-6:25 p.m.
25	Bayshore Boulevard at its Intersection with Dwight and Trenton: Residential	73.7 *	75.3 *	76	8:45-9:00 p.m.
26	Old Bayshore Highway between Malcolm and Mitten: Industrial	68.4 *	71.3 *	73	9:30-9:45 p.m.
27	Devereux Drive south of Balboa at Abraham Lincoln School: Public Facility/residential	47.2 *	52 *	62	9:50-10:05 p.m.
28	Trousdale Drive south of Sebastian: Residential	63.2	67.3	68	2:21-2:36 p.m.
29	Granada Drive east of Riviera Drive - SFO Airport Monitoring Station: Residential	52.7	54.9	61	1:45-2:00 p.m.
30	Mills Canyon Park - dirt road off La Mesa Court: Open Space	48.3	52.0	61	1:17-1:32 p.m.
31	Sisters of Mercy School - Adeline Drive south of school entrance: Residential	58.3	60.0	62	12:45-1:00 p.m.

Table 3-3. Continued

Site Measurement	Site Description: Land Use	L _{day} L _{evening} L _{night}	Measured L ₁₀	Estimated CNEL	Time of Measurement
32	Occidental Drive between Howard and Barroilhet: Residential	58.4	63.0	62	12:15-12:30 p.m.
33	El Camino Real west of Primrose: Commercial	68.2	70.0	73	11:47 a.m. 12:02 p.m.
34	Oak Grove Avenue between Carolan and Chatham at Burlingame High School: Public Facility	59.8	63.5	62	11:17-11:32 a.m.
35	Devereux Drive south of Balboa at Abraham Lincoln School: Public Facility/residential	58.8	63.2	62	11:35-11:50 a.m.
36	Broadway cul-de-sac at Roosevelt School: Public Facility/residential	61.0	65.7	63	11:04-11:19 a.m.
37	Bayswater Avenue between Channing and Stanley: Residential	56.9	57.4	62	10:26-10:41 a.m.
38	Bayswater Avenue between Lorton and Highland: Commercial	58.2	60.0	62	9:55-10:10 a.m.
39	Old Bayshore Highway between Millbrae Avenue and Cowan: Industrial	73.9	76.3	75	5:09-5:24 p.m.
40	Gilbreth Road between Malcolm and Stanley: Industrial	75.6	76.9	75	5:41-5:56 p.m.
41	Trousdale Drive west of Quesada: Public Facility/residential	65.5	69.0	65	6:18-6:33 p.m.
42	El Camino Real at Peninsula Hospital: Public Facility	68.7	72.8	69	10:20-10:35 p.m.
43	Murcheson south of Magnolia: Commercial	71	70	72	9:45-10:00 p.m.
44	Adeline Drive above Mills Canyon: Residential	62.9	67.8	63	9:10-9:25 p.m.
45	Old Bayshore Highway between Malcolm and Mitten: Industrial	65.4 **	69.1**	73	10:40-10:55 p.m.
46	Trousdale Drive south of Sebastian: Residential	59.5*	63.3*	68	9:45-10:00 p.m.
47	Trousdale Drive south of Sebastian: Residential	60.7 **	64.1**	68	10:10-10:25 p.m.
48	Bayshore Boulevard at its intersection with Dwight and Trenton: Residential	70**	71.9**	76	11:05-11:20 p.m.
49	Broadway between Carolan and Bayshore Freeway: Industrial	75.8	79.3	78	4:20-4:35 p.m.
50	Burlingame Avenue south of Lorton: Commercial	66.2	69.6	72	4:00-4:15 p.m.
51	Broadway between California and El Camino: Commercial	68.4	70	73	10:43-10:58 a.m. Saturday
52	California Drive between Oxford and Cambridge: Commercial	71.4	73.3	74	11:15-11:30 a.m. Saturday

Notes: L_{day} (L_d), L_{evening} (L_e) and L_{night} (L_n) are L_{equivalent} (L_{eq}) measurements taken during the day (0700-1900), evening (1900-2300), and nighttime (2300-0700) periods. L_{evening} measurements are indicated by one asterisk (*); L_{night} measurements are indicated by two asterisks (**); L_{day} measurements have no asterisks.

Basic input information for the model was made up of ground transportation and roadway characteristics such as Average Daily Traffic (ADT), vehicle mix or percent of trucks, roadway width and number of travel lanes. The output from the computer run of this model was translated onto a zoning map of Burlingame in the form of noise impacted areas or contours. This map of present acoustic conditions in Burlingame is included here as Figure 3-5.

In order to make Figure 3-5 more meaningful, a discussion of Burlingame's major noise sources and their relative contribution to the City's noise climate is also presented. The City's major sources of noise are automobile, truck and motorcycle traffic, airport related takeoff, landing and ground operations, and railroad traffic.

Existing Automobile, Truck and Motorcycle Noise.

In Burlingame, automobile, truck and motorcycle traffic noise affects more land area to a greater degree (higher noise level) than does aircraft noise. Figure 3-2 indicates the Average Annual Daily Traffic (ADT) on the highways and well-travelled streets in the City. Many properties of noise cause the traffic on these highways and streets to affect the areas through which they pass. The number of heavy-duty trucks relative to the total traffic volume (truck mix) is very important with regard to noise propagation, since trucks, especially diesels, are generally considerably noisier than cars. Truck noise is also emitted at a greater height (for both tires and engine noise) than is car noise and is therefore more difficult to abate. Truck mix on Burlingame's streets and highways is typical of the Bay Area; it varies from two percent in residential areas to eight percent on Bayshore Freeway to twelve percent on Rollins Road in Burlingame's industrial area.

Other very important characteristics of noise which affect the City's noise climate relate to the effect of distance on noise and more importantly the additive effect of two noise sources. With a doubling of distance from the source the noise level will drop from 3-6 dBA; the actual drop is dependent upon complex relationships such as those between topographic and meteorologic conditions. The additive effect of noise is important with regard to Burlingame's



CITY OF BURLINGAME

SAN MATEO COUNTY

CALIFORNIA

REVISED: JANUARY, 1972



Figure 3-2.
1974 Average Daily Traffic

Figure 3-3

Chart for Combining Levels of Uncorrelated Sounds.

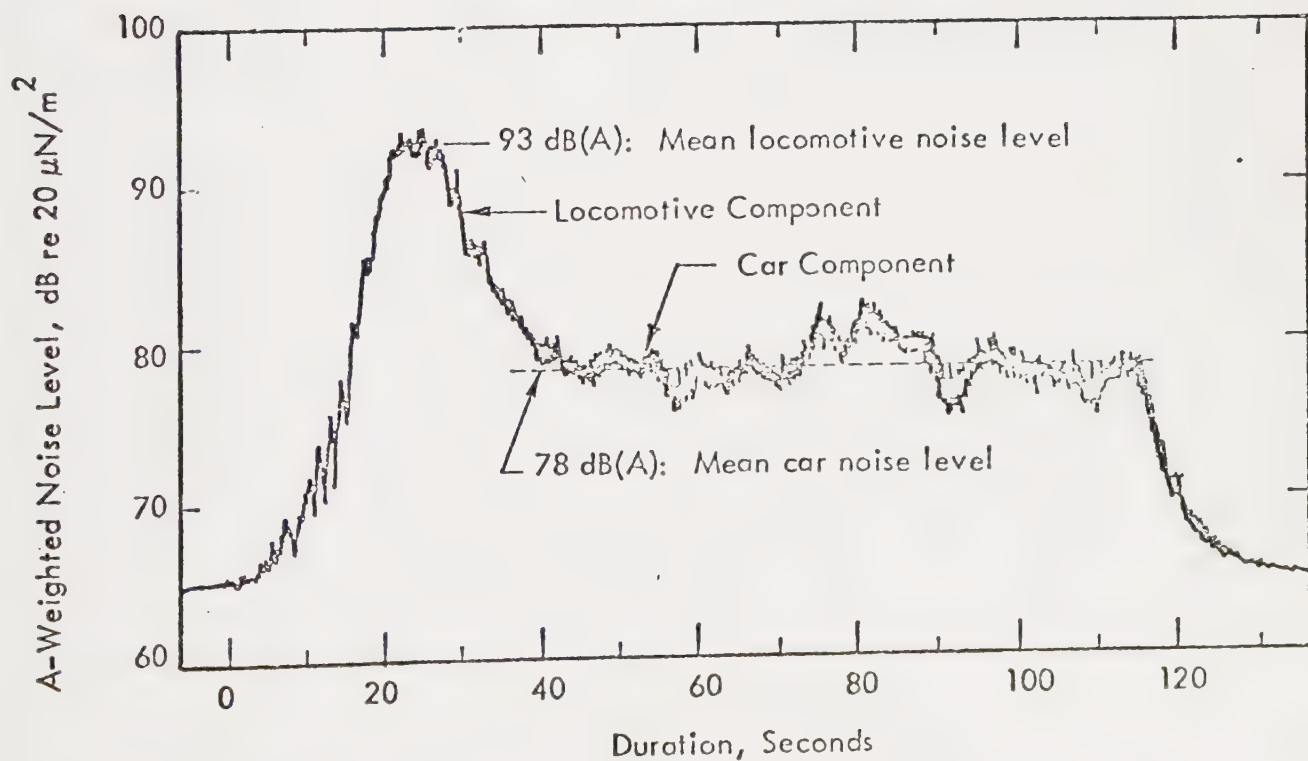
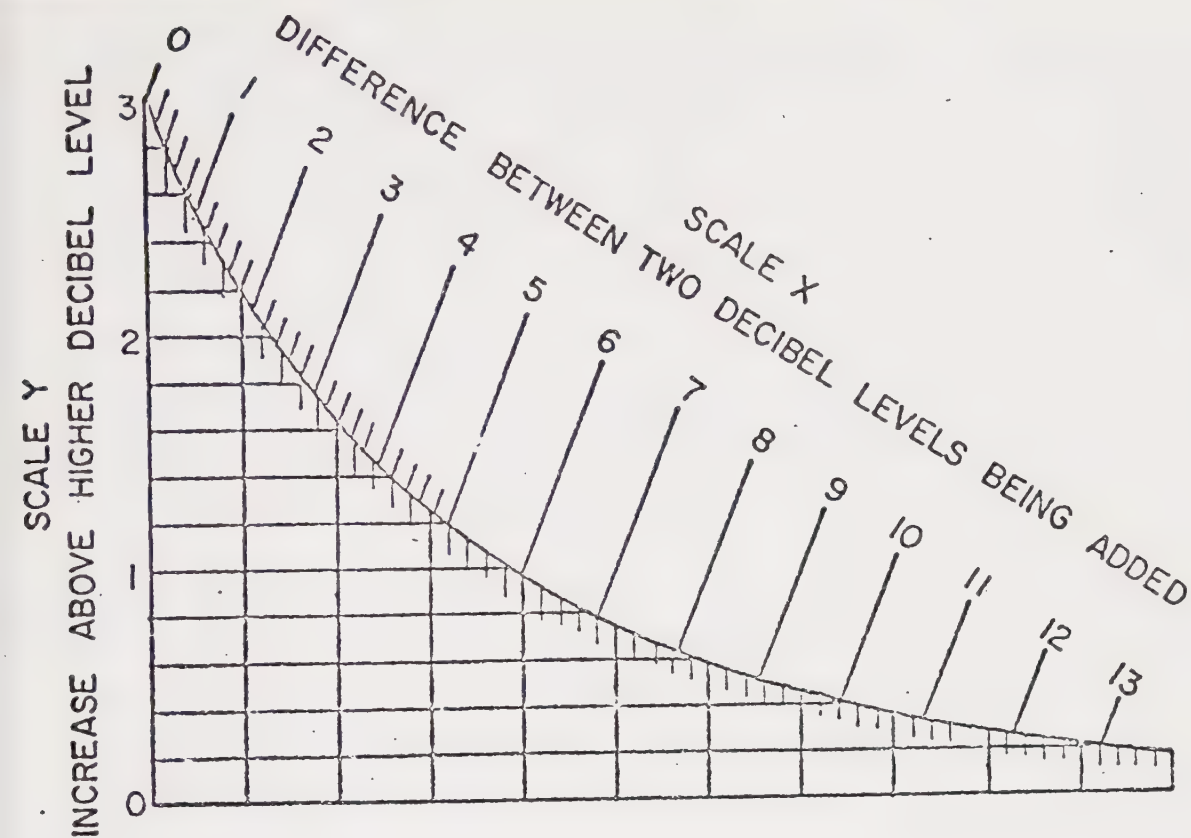


Figure 3-4. Typical A-Weighted Time History of a Train Pass-By
(Measured at 100 Feet From Track, 32 mph at +0.6 percent grade, Tehachapi Summit).

noise climate because of the locational aspects of its major ground transportation corridors - Bayshore Freeway, Southern Pacific Railroad, and El Camino Real. A combination of two or more noise sources will clearly yield a noisier environment than would occur if the noise sources existed separately. (Because of the logarithmic base of the decibel scale, two sounds of 50 decibels each do not combine to total 100; rather, they produce a combined noise level of 53 decibels. Combining two equal CNEL or dBA levels will always yield an increase of three decibels; combining unequal levels will add less than three decibels to the louder sound. The rule for this addition is illustrated in Figure 3-3.)

The additive effect causes noise levels to be higher than would be expected from any single source in areas where sound propagation from two noise sources reaches the land in between. Such areas occur between Bayshore Freeway and Southern Pacific Railroad as Broadway is approached from the east and west, and between California Drive and El Camino Real approaching Trousdale Avenue and, to a lesser extent, approaching Peninsula Avenue. In these areas, the additive effect becomes most pronounced where the contributing noise sources (the roads) become closer together.

Existing Airport Noise.

Airport noise from San Francisco International Airport takes many forms. The airport contours shown in Figure 3-5 are the 1974 CNEL Average Annual contours from the San Francisco International Airport (SFO) Environmental Impact Assessment Report (EIAR). Because these are average annual contours, they do not reflect the worst-case airport noise which occurs in Burlingame. Even the 1974 Average Seasonal Day CNEL contours also contained in the EIAR do not represent the worst case airport noise in Burlingame. These seasonal contours were based upon runway utilization distributions during the months of May and June; the worst-case months during which Burlingame is affected by airport noise are historically October, December, January, February and March.

During these latter five months, southerly and south-westerly winds necessitate takeoff and landing patterns to shift so that aircraft arrive and depart

over the City of Burlingame. The operations depart from Runway 19 and arrive on Runway 1. According to Landrum and Brown 1974 data utilized in the latest EJAR,³⁻² annual departures from Runway 19 totaled 1 percent; annual arrivals onto Runway 1 totaled .33 percent. More importantly, March was the peak departure month with 7 percent of total departures from Runway 19; December and February were peak arrival months with 2 percent of total landings onto Runway 1. Applying these percentages to the arrival/departure totals for these months, it can be determined that 823 total aircraft departed from Runway 19 in March, 240 total aircraft arrived on Runway 1 in December and 207 total planes arrived on Runway 1 in February.

The percentage number of flights utilizing this runway pair during worst-case months (relative to Burlingame) fluctuates according to weather fluctuations each year. For instance, 1972 data indicates the peak arrival month to be February with 3.58 percent of its total arrivals onto Runway 1; in March of that year, arrivals onto Runway 1 comprised 1.64 percent of total arrivals. Historically, the 1974 7 percent figure for March is high. These calculations indicate that while these worst-case months aren't reflected in the average annual impact of airport noise in Burlingame and don't show up on average annual noise contours, the City of Burlingame is more heavily affected by noise for certain months of each year than others. During these months, some aircraft take off over Burlingame's industrial area, make a left turn over Peninsula Hospital and fly south above El Camino Real; other aircraft land in approximately the reverse pattern.

Although the worst-case months were not able to be monitored during this study, many measurements were taken to assess the airport's contribution to Burlingame's noise climate.

Utilizing the Airport Land Use Commission's (ALUC) adopted CNEL contours for the airport as a guide, many measurement sites were chosen in the hilly areas of Burlingame on either side of Trousdale Drive including an area extending toward Hillside Drive east of Sebastian Drive. The representative airport industrial CNEL site in Table 3-2 had a measured CNEL of 73; the airport residential CNEL site had a measured CNEL of 68. Estimated CNELs for the residential area described above were 61, 62 or

63; it should be noted that these are estimates and actual CNELs might be found different if evening and nighttime measurements were taken at all these locations and actual CNELs computed. Because of the weighting factors involved in CNEL computation, estimation utilizing representative measurement sites is only as accurate as the representativeness of the sample sites.

The freeway residential CNEL site, while not within ALUC adopted airport contours, indicates an important property of noise especially in regard to the airport's contribution to the overall noise climate. This site had a measured CNEL of 76 and it illustrates the masking property of noise. The masking property comes about when two unequal levels of noise are involved in the same noise climate. The louder noise will mask the quieter noise especially very near the louder noise. Thusly, Bayshore Freeway noise is generally the major transportation noise that people living adjacent to the freeway (between Cadillac Way and Peninsula Avenue) hear. Two of the other representative sites in Table 3-2 also serve to indicate the airport's contribution to the overall noise climate. While there is approximately a 30 percent difference in ADT between Old Bayshore Highway and El Camino Real with Old Bayshore being the lighter traveled street, the measured CNELs for these two sites are both 73. This indicates that the airport has the effect of adding approximately 3 dBA to this site on Old Bayshore Highway.

Existing Railroad Noise.

Railroad transportation noise includes the mechanical clanking and rattling of rolling stock, the sounds of braking, rail wheel noise, aerodynamic friction, engine noise, whistles and the release of air brake pressure after the train has stopped. Since the Southern Pacific Railroad passes through the center of Burlingame directly north of California Drive, it is a significant noise source in the City. Figure 3-4 indicates the high noise level, short time duration of a single train pass-by. Twenty-two round trip commuter trains, eight freight trains and eight to ten small peddler or stop and start trains pass through the City each day. Because of the number of train operations occurring in each time period of a 24-hour day and because of the high noise levels propagated by each train, the noise contours on

either side of the railroad tracks cover great amounts of land. For instance, the contour on the south side of the tracks contains the noise contour resulting from California Drive motor vehicle traffic; that is, the railroad operations generate more noise than do the motor vehicle operations on California Drive. During measurement number 2, taken 25 feet from California Drive on the railroad side of the street, one train passed by; two trains passed by during measurement number 22 on Carolan Avenue.

Combined Noise Climate.

Figure 3-5⁴ numbered as page 3-22 following then represents the present acoustic climate in Burlingame expressed in CNEL zones. Immediately apparent is the fact that only the part of the City located away from major traffic arteries is not impacted by noise; this area is located southwest of El Camino Real in the hills above the City. Even this area is surrounded by its main traffic arteries - Junipero Serra Freeway, Trousdale Drive and Hillside Drive. It should be noted that the noise impacted areas in this figure do not take into account the noise abatement or shielding effects of buildings. Because of the high noise levels in Burlingame and because it takes three rows of buildings to reduce noise levels by five dBA (CNEL is measured in dBA units) and six rows of buildings to reduce noise levels by ten dBA, this shielding effect is of little practical consequence. For instance, the residential area bounded by Cadillac, Bayshore Freeway, Peninsula Avenue and Carolan is very heavily impacted by noise from Bayshore Freeway. The fact that there are two and three story buildings along Bayshore Freeway's Frontage Road, Bayshore Boulevard, does not significantly protect the second row of dwellings from this noise impact. This first row of dwellings only causes a 3 dBA drop in the noise level because the dwellings do not form a solid wall, because there are spaces in between the dwellings. This residential area as well as those residential areas immediately adjacent other arterials in the City such as El Camino Real, California Drive, Howard Avenue and Trousdale Drive make up the most critical land use upon which dangerous levels of noise presently impinge.

As is described in Section Four, the Environmental Protection Agency has determined that long-term exposure to noise levels higher than an CNEL of

70 dBA could result in a loss of hearing. This implies that the areas outside of the dwellings in the residential areas just described are critical with regard to hearing loss. EPA has also determined that 55 CNEL is the noise level which protects against activity interference and annoyance.

The second critical land use heavily impacted by present noise in the City is the Public Facilities land use including schools, parks, hospitals and other public buildings. As can be seen on Figure 3-5, only Pershing School, Hoover School, Abraham Lincoln School, Burlingame Intermediate School, Peninsula Hospital and the undeveloped Mills Canyon Park are located in areas where noise levels are below 60 CNEL. None of these schools are located in a 55 CNEL noise environment which is the level the State has indicated as compatible with educational land uses. Commercial land uses are generally within the 65 CNEL outdoor noise level planning criterion suggested in Section Four. Exceptions occur along California Drive, north of El Camino Real in the Trousdale Drive area and along Old Bayshore Highway; CNEL levels of 70 and above occur in these commercial areas of the City. All industrial land uses are within the 75 CNEL outdoor noise level planning criterion suggested in Section Four. All CNEL noise impacted areas are out-of-doors; interior noise levels will be 12-25 dBA lower depending on type of building construction, window type and whether windows are open or closed.

3.2 Future Acoustic Conditions.

For planning and other purposes, it is useful to have an estimate of the future noise climate. With this in mind, predicted CNEL noise impacted areas have been developed for the year 1990 and these levels are presented in Figure 3-6. ^{numbered as page 3-23 following} These noise impacted areas have been predicted utilizing a noise propagation model; the most important input data was future traffic volumes and noise characteristics of future vehicle model year mix. Average Daily Traffic (ADT) projections used assumed a ten percent increase from present in traffic on most highways and streets; exceptions were Bayshore and Junipero Serra Freeways, Old Bayshore Highway, the western end of El Camino Real and Broadway Avenue which utilized higher projections developed in the San Francisco

International Airport (SFO) Environmental Impact Assessment Report (EIAR), and Airport Boulevard which utilized projections performed for Burlingame by the JHK traffic consulting firm. These exceptions to the ten percent increase are indicated in Figure 3-2. Standard projections of the noise characteristics of future vehicle model year mix were utilized to account for the increasingly stringent California noise emission standards (outlined in Section Four) and the fact that quieter vehicles will replace many of the relatively noisy vehicles on the road today. The percent of trucks on the road was assumed to remain constant.

Future Automobile, Truck and Motorcycle Noise.

In the future, somewhat quieter automobiles, trucks and motorcycles are expected to replace relatively noisy motor vehicles now on the road. Largely because of this fact, noise impacted areas due to motor vehicle sources are predicted to decrease in size even though ADT will increase in the future. Because of a sizeable increase in ADT predicted for Airport Boulevard as it becomes developed, this area will encounter increased noise emanating from the boulevard onto adjacent lands. This fact is of special significance for two reasons: (i) this area is largely undeveloped at present and therefore noise attenuation measures can be required of and designed into new developments as they occur, (ii) the proposed Bayside City Park in this area is a land use upon which noise impaction is a critical factor. While a similar, somewhat larger increase in ADT might be predicted for Old Bayshore Highway with regard to its potential for bayside commercial developments, detailed predictions haven't been made regarding such development. The prediction utilized for this area is based upon increased traffic caused by SFO expansion. The point is that Figure 3-6 shows the noise climate along Old Bayshore Highway decreasing by 1990; this prediction might be greatly different if increased traffic from future waterfront commercial development was predicted in detail.

In 1990, CNEL noise impacted areas along the majority of highways and streets in the City will decrease by approximately five dBA. Along Bayshore Freeway, Junipero Serra Freeway, California Drive, El Camino Real, Howard Avenue and Trousdale Drive, noise impacted areas decrease in size. Along other streets in the City such as Peninsula, Lorton, Park, Burlingame, Bellevue,

Primrose, Carmelita, Broadway south of El Camino Real, Easton, Hillside, Adeline, Ray, Skyline, Magnolia and Murcheson, CNEL levels decrease by approximately five dBA from the 65-70 range to the 60-65 range. Areas in which noise levels are below 60 CNEL enlarge in the most areas in the City and especially in residential areas between Carolan Avenue and Bayshore Freeway.

Noise intrusion into residential areas is less intense but many areas still do not meet the Section Four planning criterion; the residential area adjacent to Bayshore Freeway is still the most severely impacted residential area in the City and parts of this area and other residential areas immediately adjacent major arterials are still seriously impacted with regard to hearing loss criteria. Public facilities land uses have an improved noise climate in 1990. City Hall, a portion of Washington Park and Guernevaca Park now have a noise environment lower than 60 CNEL. All other schools, parks and public facilities buildings except Burlingame High School, a portion of Washington Park and McKinley School encounter noise environments approximately five CNEL lower than at present. Commercial land uses in the City meet the Section Four planning criterion of 65 CNEL except for areas adjacent to Broadway Avenue, California Avenue, Old Bayshore Highway and the area north of El Camino Real near Trousdale Drive. The industrial land uses have an improved motor vehicle-caused noise climate in 1990 with the majority of land in this use at 65-70 CNEL, well below the Section Four planning criterion of 75 CNEL.

Future Airport Noise.

Prediction of future airport noise is not included on Figure 3-6. The reason for this is that one major assumption upon which the SFO EIAR prediction of future noise climate is based has recently come into question. This assumption is that all aircraft flying in 1990 (with the exception of the B-727) will have been retrofitted with noise suppressors, "quiet nacelles" or "refanned" engines in order to meet Federal Aviation Regulations - Part 36. The recent recommendation to the Federal Aviation Administration (FAA) by the President's Council on Wage and Price Stability that the retrofitting noisy jets is

not worth the cost and would be unduly inflationary.³⁻⁴ In addition to this, recent Notices of Proposed Rule Makings (NPRMS) from both EPA and FAA are still unresolved. Until these NPRMS (one of which involves the retrofit program) are resolved, definitive future noise predictions of airport noise cannot be made.

Future Railroad Noise.

Future railroad noise is not predicted in Figure 3-6; instead, present railroad noise is indicated. The reason for this, as with future airport noise, is uncertainty with future events related to the noise source. Until BART, an upgraded Southern Pacific Railroad or some type of improved fixed-rail transit extends down the Peninsula, it is assumed that Southern Pacific will continue to operate at approximately its present level. Until some type of improvements are made on the existing system, noise will remain approximately the same. Present, at grade segments of BART propagate noise levels of 70-75 dBA at a distance of 50 feet; this would be a 20-25 dBA reduction compared to present Southern Pacific Railroad noise levels. However, if Burlingame should receive a BART station or maintenance yard, attendant noise from motor vehicle trips to and from the station and/or increased station or maintenance yard activity might very well increase over that noise at the present Southern Pacific Railroad station. This type of possible noise should be adequately handled by an Environmental Impact Report and subsequent required mitigation measures to deal with such noise.

MILLBRAE

SAN

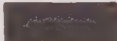
FRANCISCO

BAY

SAN MATEO

HILLSBOROUGH

CNEL CODE

-  > 70
-  65 - 70
-  60 - 65

Note: These CNEL Contours do not take the sheilding effect of buildings into account (see p.3-20).

ZONING MAP CITY OF BURLINGAME SAN MATEO COUNTY CALIFORNIA

Figure 3-5 1975 CNEL Contours

WAYNE M. SWAN
CITY PLANNER
GEORGE J. MARR
CITY ENGINEER
REVISED JANUARY 1973
SCALE IN FEET

- LEGEND**
- R1 SINGLE FAMILY DWELLINGS
 - R2 DUPLEX DWELLINGS
 - R3 APARTMENTS OR MULTIFAMILY DWELLINGS
 - R3A LOW DENSITY APARTMENTS
 - R4 APARTMENTS AND OTHER SPECIFIED USES
 - C1 COMMERCIAL-RETAIL TRADE
 - C2 COMMERCIAL-SERVICE TRADES
 - C3 PROFESSIONAL USES
 - M1 INDUSTRIAL
 - TP TIDAL PLAIN
 - C4 WATERFRONT COMMERCIAL
- ZONING MAP OF THE CITY OF BURLINGAME
REPUBLISHED AS THE CURRENT OFFICIAL
ZONING MAP OF THE CITY OF BURLINGAME
PER RESOLUTION NO. 15-73 REPUBLISHING
ZONING MAP UNANIMOUSLY ADOPTED BY
THE CITY COUNCIL ON THE 20TH DAY OF
FEBRUARY, 1973



4. PLANNING CRITERIA AND NOISE EMISSION STANDARDS.

In planning for a desired community noise climate, two types of consideration are important. First, due to existing noise sources which are essentially fixed (such as freeways, railroads, and airports) certain areas may be unsuitable for some types of land use. It is therefore desirable to establish criteria by which the planner may determine acceptable land uses for a given site with respect to noise compatibility. Second, limits must be placed on the noise emissions of individual sources to ensure that noise levels within any given land use remain within or are scheduled to descend to some recommended level.

Urban areas in general, and the City of Burlingame in particular (considering its proximity to the San Francisco International Airport) are often too noisy to permit economically feasible methods of reducing noise levels to theoretically optimal levels. Because of this fact, these theoretical levels, the actual noise climate, the General Plan and the wishes of the people of Burlingame (as determined by the noise questionnaire, Appendix C) were all considered prior to formulation of the noise level planning criteria presented below.

4.1. Land Use Planning Criteria.

The United States Environmental Protection Agency has published the results of its research regarding noise levels and their effects on people.⁴⁻¹ Table 4-1 summarizes the findings of this document. The three noise levels it arrives at are 70 dB for hearing loss, 55 dB for outdoor activity interference and annoyance and 45 dB for indoor activity interference and annoyance. One of the major activities involved in "activity interference and annoyance" concerns the maintenance of a noise level low enough so as not to interfere with normal human speech; other activities are sleep, reading, studying, eating, relaxing, listening to records, tapes or radio, watching television, and occupation-related activities.

Table 4-1.

SUMMARY OF NOISE LEVELS IDENTIFIED AS REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY⁴⁻¹

EFFECT	LEVEL	AREA
Hearing Loss	$L_{eq(24)} \leq 70$ dB	All areas
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq(24)} \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} \leq 45$ dB	Indoor residential areas
	$L_{eq(24)} \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Notes:

$L_{eq(24)}$ represents the sound energy averaged over a 24-hour period while L_{dn} represents the L_{eq} with a 10 dB nighttime weighting. L_{dn} is approximately equal to CNEL.

The hearing loss level identified here represents annual averages of the daily level over a period of forty years. (These are energy averages, not to be confused with arithmetic averages.)

These levels are most probably unattainable in much of Burlingame. A Set of recommended levels which will provide a reasonable noise climate within the City yet not severely inhibit development have been derived. The suggested outdoor noise levels suitable to various land use categories are given in Table 4-2.

Table 4-2. Outdoor Noise Level Planning Criteria.

MAXIMUM OUTDOOR NOISE LEVELS (dBA)	
LAND USE CATEGORIES	CNEL
<u>PUBLIC AND QUASI-PUBLIC AND RESIDENTIAL</u> Schools, Hospitals, Libraries, Auditoriums, Intensively Used Parks and Playgrounds, Public Buildings, Single Family Homes, Multiple Family Apartments and Condominiums Mobile Home Parks	60
<u>PASSIVELY-USED OPEN SPACE</u> Wilderness-Type Parks, Nature or Contemplation Areas of Public Parks	45
<u>COMMERCIAL</u> Shopping Centers, Self-Generative Business, Commercial Districts, Offices, Banks, Clinics, Hotels and Motels	65
<u>INDUSTRIAL</u> Non-Manufacturing Industry, Transportation, Communications, Utilities, Manufacturing	75

These criteria may be invoked for the following purposes:

- a. to determine the suitability of development on lands considered as receptors to which the standards apply
- b. to determine the suitability of building types and proposed construction materials to be applied on the site

With regard to indoor noise levels, noise reduction as a result of building type has been documented by the Federal Highway Administration; this information is contained in Table 4-3 below:

Table 4-3
Sound Level Reduction Due to Building Type and Window Condition

Building Type	Window Condition	Reduction of Noise from Outside Sources
All	Open	10 dB
Light Frame	Ordinary, sash closed	20 dB
Masonry	Single pane, closed	25 dB
Masonry	Double pane, closed	35 dB

The recently adopted State Housing Act (Administrative Code, Title 25, Article 4) requires the following of non-single family detached residential units:

"(e) Noise Insulation from Exterior Sources:

- (1) Location and Orientation. Consistent with land-use standards, residential structures located in noise critical areas, such as proximity to select system of county roads and streets (as specified in 186.4 of the State of California Streets and Highways Code), railroads, rapid transit lines, airports, or industrial areas shall be designed to prevent the intrusion of exterior noises beyond prescribed levels with all exterior doors and windows in the closed position. Proper design shall include, but shall not be limited to, orientation of the residential structure, set-backs, shielding, and sound insulation of the building itself.
- (2) Interior Noise Levels. Interior community noise equivalent levels (CNEL) with windows closed, attributable to exterior sources shall

not exceed an annual CNEL of 45 dB in any habitable room.

- (3) Airport Noise Source. Residential structures to be located within an annual CNEL contour (as defined in Title 4, Subchapter 6, California Administrative Code) of 60 dB require an acoustical analysis showing that the structure has been designed to limit intruding noise to the prescribed allowable levels. CNEL's shall be as determined by the local jurisdiction in accordance with its local general plan.*
- (4) Vehicular and Industrial Noise Sources. Residential buildings or structures to be located within annual exterior community noise equivalent level contours of 60 dB adjacent to the select system of county roads and city streets (as specified in Section 186.4 of the State of California Streets and Highways Code), freeways, state highways, railroads, rapid-transit lines and industrial noise sources shall require an acoustical analysis showing that the proposed building has been designed to limit intruding noise to the allowable interior noise levels prescribed in Section T25-1092(e) (2).
Exception: Railroads where there are no nighttime (10:00 p.m. to 7:00 a.m.) railway operations and where daytime (7:00 a.m. to 10:00 p.m.) railway operations do not exceed four (4) per day."

Since most residential structures (with windows closed and single pane glass) have the capability of reducing noise levels from exterior sources by 20 dBA, the State's interior standard of 45 dBA should normally be achieved when exterior levels do not exceed 65 dBA. It should also be noted that implementation of the State act requires that the precise location of the 60 dBA (CNEL) contour be known.

In certain cases where the functional use of a building is such that windows are not opened and outdoor areas are not used for any reason other than parking and walking into the building, outdoor noise levels can be ignored and indoor noise level planning criteria may be appropriate.

* It should be noted that neither the Airport Land Use Commission's (ALUC) adopted airport contours nor the latest San Francisco International Airport (SFO) Environmental Impact Assessment Report (EIAR) contours delineate the 60 CNEL line.

Such building uses might include indoor auditoriums, certain public buildings, totally-enclosed shopping centers, certain self-generative business, professional offices, banks, clinics and motels without outdoor pool or park areas.

In such cases, the indoor noise level planning criterion should be 45 CNEL. The outdoor noise level planning criteria chosen assure that the 45 CNEL indoor level will be achieved by the noise attenuation of regular construction materials. Because the indoor noise level planning criteria waive the outdoor criteria, it is of utmost importance that building plans and building inspections be very detailed and extensive to assure that the indoor criterion will be achieved. Improper choice of materials and/or improper installation of such materials can make them ineffectual.

The Occupational Safety and Health Administration (OSHA) and EPA have jurisdiction over occupational noise; OSHA allows a maximum Leq of 90 dB for an eight hour day. In view of the fact that these agencies are still debating the question of adequate occupational noise levels, and since OSHA has enforcement authority over these levels, it is recommended that the City of Burlingame defer to the Federal authorities for consideration of occupational noise produced indoors.

4.2 Noise Emission Standards.

Noise emission standards may be invoked for the following purposes:

- a. to regulate any noise source (other than aircraft and motor vehicles operating on public thoroughfares) which cause violation of the standards.
- b. to determine the suitability of land to be developed considered as a noise source with nearby properties considered as receptors to which the standards apply.

Standards for aircraft and ground transportation noise, Burlingame's two major sources of noise, have been established by State and Federal government agencies. Burlingame can enforce ground transportation emission standards through its police department; these standards are therefore presented here. Table 4-4 presents State standards for motor vehicles operating on public roadways; Table 4-5 presents State standards for new motor vehicles at the time of sale.

Recommended noise emission standards for construction equipment operating in the City of Burlingame are listed in Table 4-6. These are to be applicable to the named source whether operated by individuals, companies, public agencies or other organizations. Enforcement of these standards are discussed in Section 5 of this element. In addition to these specific standards, the following standard should be met:

No person shall be allowed to cause any noise to be emitted past his/her property line in any manner so as to create any noise which would cause the ambient L_{10} noise level to be increased by more than 5 dBA. The procedure for determining if this standard is being violated is described in Appendix F at the end of the Noise Ordinance.

The CNEL noise descriptor was not chosen for this standard (i) because it is not adequate for measuring peak type annoyance noises for which this standard is designed, (ii) it requires measurements during the day, evening and nighttime periods which make it prohibitively costly in terms of enforcement. This standard, being both quantitative and measurable prevents possible errors of subjectivity involved in the enforcement of a noise ordinance.

Table 4-4. California State Noise Emission Standards for Motor Vehicles (at 50 feet from center lane of travel).

Vehicle Type	$\leq$ 35 mph	> 35 mph
Trucks*	88	90
Motorcycles	82	86
Automobiles	76	82

*For trucks manufactured after 1973, and operating at 35 mph or less, the maximum level allowed for is 86 dBA.

Notes: Trucks are defined to be "Any motor vehicle with a manufacturer's gross vehicle weight of 6000 lbs. or more, and any combination of vehicles towed by such motor vehicles."

Motorcycles are defined to be "Any motorcycle other than a motor driven cycle."

Automobiles are defined to be "Any other motor vehicle and any combination of vehicles towed by such motor vehicle."

Table 4-5. California Noise Standards for New Motor Vehicles.

Class	California
<u>Motorcycles:</u>	
Until 1.1.73	88 dB A
After 1.1.73	86 dB A
After 1.1.75	80 dB A
After 1.1.77	75 dB A
<u>Light Vehicles:</u>	
Until 1.1.73	86 dB A
After 1.1.73	84 dB A
After 1.1.75	80 dB A
After 1.1.77	75 dB A
<u>Heavy Vehicles:</u>	<u>(6,000 #)</u>
Until 1.1.73	88 dB A
After 1.1.73	86 dB A
After 1.1.75	83 dB A
After 1.1.77	80 dB A

Table 4-6.

Maximum Allowable Noise Levels From
Construction Equipment

Equipment	Peak Noise Level in dBA at 50 ft
Earthmoving	
front loader	75
backhoes	75
dozers	75
tractors	75
scrapers	80
graders	75
truck	75
paver	80
Materials Handling	
concrete mixer	75
concrete pump	75
crane	75
derrick	75
Stationary	
pumps	75
generators	75
compressors	75
Impact	
pile drivers	95
jackhammers	75
rock drills	80
pneumatic tools	80
Other	
saws	75
vibrator	75

5. NOISE ABATEMENT AND CONTROL PROGRAMS

Noise levels in Burlingame can be reduced by controlling the three factors of noise propagation: 1) the source of the noise, 2) the path the noise travels, and 3) the receptors of the noise (the people who hear the noise). The most effective method of noise control is preventing noise from being generated; all other methods of noise control limit the area affected by the noise. However, control of the noise source is often not within the realm of local government capability. Most often, local governments must concentrate on control over the path or the receptor of noise. Various programs of noise abatement and control are available. A wide range of such programs is presented here in order that they may be available for the City of Burlingame's consideration and possible implementation either now or in the future.

5.1 Administrative Review Process.

Existing administrative review processes involving environmental impact and building permits offer local governments a definite method with which to control noise paths, receptors, and to some extent, sources. There are several existing administrative processes which may be used to abate noise:

- (i) Determination of need for an Environmental Impact Report for public and private projects
- (ii) Design of scope of work for Environmental Impact Report
- (iii) Inspection of building plans and issuance of a building permit

5.1.1 Determination of Need For An Environmental Impact Report.

In determining the need to produce an Environmental Impact Report pursuant to requirements of the California Environmental Quality Act (CEQA), City staff should follow these guidelines to determine whether significant potential acoustic impacts may arise from the project. These guidelines are derivative from the noise standards, noise ordinance and the applicability of CEQA to uphold local environmental standards.

Significant acoustic impact may arise whenever any of the following hold within the planning time window (usually between 2 and 20 years after construction).

Roadway Alteration or Construction.

The guidelines which follow, for determination of need for an environmental impact report in the event of roadway alteration or construction, provide a means for evaluating noise increases due to normal growth in traffic as well as those due to increased traffic attracted by a new roadway. An EIR is required:

- a. If additional average daily traffic (ADT) in excess of 20% is generated by a project over and above normal traffic growth of a roadway segment where neighboring land use is hospital, school, park, open space, residential, professional office or commercial; if additional average daily truck traffic in excess of 10% is generated adjacent to the same land uses; or if roadway operating speeds will increase by more than 10 mph adjacent to the same land uses.
- b. If additional ADT in excess of 30% is generated over any roadway segment; if additional average truck traffic in excess of 15% is generated by the project over any roadway segment; if roadway operating speeds will increase by more than 20 mph over any roadway segment.
- c. If additional or new design capacity in excess of 20% of existing ADT is generated by a project over any roadway segment whose neighboring land use is hospital, school, park, open space, residential; if additional design capacity in excess of 30% ADT is generated by the project adjacent to any land use.
- d. If other significant roadway operations are altered such as: appreciable upward change in uphill grade ($>3^{\circ}$ sustained for linear distance of 100 meters), significant additional congestion where average speeds are already less than 20 mph, or significant altered traffic corridors of major traffic-carrying roadways ($>10,000$ ADT).

Residential Developments.

- a. If the development is greater than 40 dwelling units and meets one or more of the following:
 - (i) adds more than 10 percent to ADT on one or more adjacent roadways.
 - (ii) is adjacent to a roadway of peak hour design capacity or approved planned capacity greater than 1000 vehicle/hour.
 - (iii) if the development has inter-unit walls (e.g. apartments, townhouses, condominiums).
- b. If the development is greater than 80 dwelling units.

Hospitals and Schools.

If the development provides for more than 100 new or additional beds or enrollment positions and either the facility adds more than 10 percent to the ADT on one or more adjacent roadways or is adjacent to a roadway of peak hour design capacity greater than 1000 vehicles/hour.

Professional Office and Commercial.

If the development adds more than 10,000 square feet of leaseable commercial or professional office space and adds more than 10 percent to the ADT on one or more roadways or is adjacent to a roadway of peak hour design capacity greater than 1000 vehicles/hour.

Construction Activity.

If the development requires construction activity for more than 30 elapsed days using any combination of sources of noise listed in Table 4-6.

Recreational or Sports Facilities.

If the development could generate peak arrivals or departures of more than 1000 vehicles/hour.

Other.

If the development introduces a new source of stationary noise or otherwise induces increased traffic levels, railroad activity, or loud-speaker use such that the noise climate for residential, hospital, school, park, commercial, professional or open space use may be materially modified.

5.1.2 Design of Scope of Work for Environmental Impact Report.

If a project has been determined to require an environmental impact report by having met exactly one of the conditions specified in Section 5.1.1, the environmental impact report shall include the following tasks:

Level 1, Acoustic Analysis.

- a. Measure existing noise levels for at least two distinct sites appropriate to the time of day of sensitive activities for the nearby receptor land uses (including the project site itself).
- b. Predict future noise using a noise propagation model for the most noise sensitive times of day for each land use, and for build and no-build futures. The prediction shall consider topography, building locations, diffraction effects, microclimate, traffic conditions (including vehicle volume, speed, and mix), and combinations of noise sources. Two future years shall be considered; 2 and 20 years after construction.

- c. Derive mitigating measures for abating and reducing noise, including a consideration of ways of altering traffic volumes, other traffic operating characteristics, zoning, and a consideration of the use of noise barriers. In this sense the proposed project must be considered both as a noise receptor and a noise producer.

If the project has been determined to require an environmental impact report by having met two or more of the conditions specified in Section 5.1.1, or if one condition is met with any traffic volume more than twice the threshold traffic volume specified, then the following tasks shall be included in the environmental impact report:

Level 2, Acoustic Analysis.

- a. Measure noise levels for at least five distinct locations appropriate to the time of day of noise sensitive activities for the nearby receptor land uses (including the project site itself).
- b. Predict future noise using a noise propagation model for the most noise sensitive times of day for each land use, and for build and no-build futures. The prediction shall consider topography, building locations, diffraction effects, micro-climate, traffic conditions (including vehicle volume, speed and mix) and combinations of noise sources. Two future years shall be considered; 2 and 20 years after construction.
- c. Derive mitigating measures for abating and reducing noise, including a consideration of ways of altering traffic volumes, other traffic operating characteristics, zoning, and a consideration of the use of noise barriers. In this sense the proposed project must be considered both as a noise receptor and a noise producer. Consider project alternatives specifically to mitigate acoustic impacts. Consider trade-offs of noise, air quality, traffic, water quality and other impacts in these mitigating actions and project alternatives.

5.1.3 Implementation of the California State Uniform Building Code
Acoustical Clearances.

As an integral part of the building permit system, the following procedure is recommended for implementation by the city staff. Initiation of the program requires the city to appoint a member of the city staff to administer the acoustical review process which could include review of the noise elements of the Environmental Impact Statement. Hereafter, the term "city staff" is used to denote such an administrator. One of his functions is also to determine one or more companies qualified to perform acoustical analyses until such time as the city may have field measurement equipment, trained field personnel, and an operational noise propagation model.

Step 1. Review for Adequacy of Data.

The city staff will review plans for proposed buildings which are subject to the provisions of the State Code, to insure adequate data has been submitted for an acoustical analysis to be performed. The data submitted must contain:

- a. Name, address and telephone number of project architect
- b. Project location and plan of final grading, including description and location of any noise abatement structures
- c. Plan view of entire project structure, showing distance from each perimeter wall to the property line
- d. Plans of each wall showing the height of each door and window with respect to final grade
- e. Cross sections of walls and roof; additional cross sections for windows and doors and their connections to the rest of the structure
- f. Description of construction and insulation materials for all exterior walls, roof, doors, and windows

- g. All acoustical data (or citations thereto) of which the applicant is aware concerning the acoustical characteristics of the vicinity of the proposed development or special characteristics of the proposed building materials. This data should specifically include the location of the 60 CNEL contour as required by State law (see Section 4.1).

Step 2. Acoustical Analysis.

After the city staff reviews the initial project description, and the above data, written notice will be given to the applicant indicating (i) areas of insufficient data or (ii) a statement that data needs are adequate and a list of approved acoustical consultants from whom the applicant may obtain services. The acoustical analysis will provide the data indicated in Appendix D. Note that two future noise forecast years are required. The acoustical analysis must be rendered for representative dwellings along each project boundary to assure that traffic or other external sources which vary around the development perimeter are addressed. The acoustical analyst will certify compliance of plans with the State Code, or alternatively, lack of compliance, with recommended abatement measures.

5.2 Aircraft Noise.

Aircraft noise emanating both from overhead and ground operations is an important noise consideration in Burlingame. The principal practical methods available to the City for abatement of such noise are related to indoor levels. Considering the outdoor life style prevalent in California, this method of noise abatement is not totally satisfactory; control over the source is therefore another alternative method for consideration in abating aircraft noise. Since control over aircraft as a noise source is pre-empted by the Federal Aviation Administration (FAA) and the Environmental Protection Agency (EPA), the City of Burlingame's ability to influence aircraft noise levels is largely limited to technical, legal and political interfaces with San Francisco Airport, the FAA and the EPA.

A 1973 EPA report, required by the 1972 Federal Noise Control Act, for aircraft and airport noise problems concluded that "...it appears that existing FAA flight and operational controls do not adequately protect the public health and welfare from aircraft noise."⁵⁻¹ Since this report, EPA and FAA have been working together on various measures to assure that aircraft noise is abated or controlled in a timely manner. It should be noted that the final decision to modify or adopt new regulations for the control of aviation noise is the responsibility of FAA. It is recommended that Burlingame act in a technical review capacity to insure that (i) airport monitoring sites are in the most meaningful locations to report the exposure of Burlingame residents to aircraft noise and (ii) aircraft noise abatement is taking place as quickly as feasible and on schedule with stated goals and those levels required by law.

5.2.1 Airport Noise Surveillance Program.

It is recommended that the City of Burlingame require its staff or a noise consultant to independently assess the noise climate on an annual basis and especially during the January-February storm weather season based on the San Francisco Airport's required noise monitoring data. Utilizing the assessment of 1975 airport noise climate in Burlingame (presented in Section 3), the annual assessment would give a technical appraisal of progress toward reduced levels of airport noise. This assessment should include (i) determining the locational suitability of the SFO Airport noise monitoring system; (ii) assessing the validity of noise measurements taken at this system's locations in Burlingame; and (iii) analyzing the thoroughness of data reduction in particular to insure meteorological factors affecting atmospheric noise propagation.

It is recommended that the City would assign a staff member or consultant the task of keeping abreast of all airport activities relevant to the City of Burlingame's noise climate. This person would be in contact with the City and County of San Francisco Airports Commission, the County of San Mateo Airport Land Use Commission, the San Francisco International Airport, the Federal Aviation Administration, the Environmental Protection Agency,

the Association of Bay Area Governments and other Bay Area cities surrounding and impacted by the airport.

This person should bring matters of import to the Planning Commission and City Council in order that these bodies might consider policy statements, recommendations etc. to be sent to various governmental organizations for various reasons.

5.2.2 Litigation.

The City Attorney for Burlingame should also keep abreast of airport-related litigation in the State and in the Country. The tracking activity described above could aid the City Attorney in keeping abreast of litigation, and also might suggest possible avenues of action by the City of Burlingame with respect to various governmental agencies connected with the airport. The results of the noise consultant's annual monitoring of aircraft noise may constitute grounds for litigation.

All of the above recommendations for staff participation in aircraft noise related activity could be (at the City's discretion) combined with tasks of a Noise Enforcement Officer also responsible for enforcement of other aspects of the noise element.

5.3. Surface Transportation Noise

There are many possible noise control and abatement programs to deal with surface transportation noise. The administrative review process covered above is one method of dealing with such noise; other methods will be outlined below.

5.3.1. Truck Routes

Since trucks are generally the noisiest vehicles on the road, establishment and strict enforcement of truck routes in the City could serve to lower noise levels in noise sensitive areas. It must be realized that such enforced truck routes will cause increases in noise on the subject streets and hardship for truck drivers with tight time schedules. For this reason, existing somewhat out-of-date truck routes should be reassessed with both truck freight time schedules and noise sensitive areas taken into account. After such consideration, truck routes may be redesignated with educational campaign and leniency period set up after which strict enforcement should take place. After a period of one to three months, a review should be undertaken and modifications in the truck routes made to alleviate unforeseen problems.

5.3.2. Vehicle Emission Standards Enforcement.

The enforcement of vehicle noise emission standards presented in Section Four can help to reduce the number of illegally-loud vehicles operating on Burlingame streets. This would require assignment of one police officer (part or full-time); this person would need to be trained to use at least a small inexpensive noise meter (less than \$500) which the City would purchase. For instance, the City of Palo Alto has had great success with such a program. Such a police enforcement officer might also respond to noise complaints not involving vehicles. Such complaints as barking dogs or loud music might be found to be illegally noisy depending upon which noise standards are finally agreed upon for inclusion in a City Noise Ordinance. Alternatively the City might rely on consulting support for measurement and technical assistance to reduce the time and training demands

on a police officer.

5.3.3. Rerouting Traffic/Neighborhood Traffic Plans.

A study of traffic rerouting schemes could be employed to adjust the noise climate (via traffic routes) to the City's wishes. Neighborhood traffic plans utilizing such techniques as traffic diverters and dead end streets might be employed to assure that through traffic does not utilize short-cuts through residential areas. The City of Berkeley has recently adopted a city-wide traffic plan aimed at forcing through traffic onto major arterials. Such a plan should take into account the potential increases in noise due to such a shift as well as the decreases.

5.3.4 Encourage Quiet Transit.

Encouragement and actual implementation of mass transit and carpool systems (buses or BART type systems) has potential in terms of decreasing the number of noise-producing vehicles on the road. Progress on these systems may be limited by available capital and coordination with other agencies.

5.3.5. Municipal Vehicle Noise Control.

The City should set a good example, especially prior to any educational campaign, by making sure that all municipal vehicles are as quiet as possible. This is especially true of City vehicles operating at noise-sensitive hours such as street-sweepers.

5.3.6. Reduce Roadway Speeds.

By reducing the speed of traffic flow, there will generally be a reduction of the sound levels emanating from those roadways. Selective enforcement along problem roads, possibly by the same enforcement person as discussed above in 5.3.2., could be of great value.

5.3.7 Noise Barriers.

In the event that a noise standard is exceeded, various mitigating and abatement measures are available for implementation. These involve various levels of expense and effectiveness. A list of possible abatement measures appears in Table 5-1. Some of the more practical measures are discussed in more detail in Appendix A. It should be noted that some of the measures in Table 5-1 may be cost prohibitive; others may not provide the effectiveness required. Each particular noise problem will need to be dealt with individually by a competent acoustical analysis firm in order for the suitable method to be chosen. In addition, most abatement measures, such as barriers and insulation need to be custom designed to meet the individual needs (in terms of effectiveness) of the problem. Aesthetic, urban design considerations must be kept foremost in mind with regard to acoustical barriers; there are many examples of poorly designed walls in the Bay Area.

Table 5-1. Insulation and Abatement Measures (in order of approximately increasing effectiveness)

Landscaping

Acoustical Barriers*

- Precast-Concrete Panel Wall
- Poured in Place Concrete Wall
- Cor-Ten Steel Wall
- Rock Wall (without air gaps)
- Aluminum Wall
- Wood Wall
- Earth Berm

Insulation of Noise Receptor

Insulation of Noise Source

Relocation of Noise Receptor

Relocation of Noise Source

* Source: Noise Barrier Design Report, Washington State Department of Highways; May, 1974.

5.4 Updating of the Noise Element.

The noise element should be updated to account for current traffic levels, land uses, and source characteristics whenever any of the following occur:

- (i) The entire General Plan is updated.
- (ii) Major traffic additions or rearrangements exist compared to the base year of 1975.
- (iii) Major new industrial sources are introduced.
- (iv) Major rail traffic increases are made.
- (v) 1980 is reached or a population of 35,000.

At that time, the data base should be assessed, new forecasts made, the ordinance reviewed and planning procedures updated.

5.5 Noise Ordinance and Control of Other Noise Sources.

Various noise ordinances have been reviewed. The model ordinance developed by the League of California Cities appears to be the best approach for the City of Burlingame; it is included in this report as Appendix G. Any final noise ordinance enacted by the City should address other noise sources such as barking dogs, loud music and parties, maintenance operations carried out by the City etc. Provisions for the control of such noise sources are contained in the League of California Cities Model Ordinance. Enforcement of any noise ordinance will require that a city staff person be assigned as a noise enforcement officer at least part time. A typical enforcement procedure is described at the end of Appendix F. Allocation of staff time to such an enforcement program will depend upon the City's overall resources. The City may wish to adopt a noise ordinance which covers only those noise sources considered most annoying to the Burlingame populace; such a selective noise ordinance would serve to focus staff time in those areas where it is most needed.

6. IMPLEMENTATION: GOALS, POLICIES AND PROGRAMS.

The following goals, policies and implementation programs are recommended for adoption by the City of Burlingame based upon results of a recent Noise Questionnaire (described in Appendix C) as well as a knowledge of present and future acoustic conditions throughout the City, an understanding of present land use, and consideration of the General Plan.

6.1. Goals.

The goals of city-wide noise control are to:

- a. Preserve peaceful noise conditions in the city where they do exist.
- b. Reduce annoying levels of noise for existing situations; aircraft, motor vehicle and domestic animal noise were identified by a Noise Questionnaire to be the most annoying at present.
- c. Achieve a peaceful acoustic environment in portions of the city to be developed.
- d. Consider use of existing city and inter-governmental processes to accomplish noise control.
- e. Arrive at resultant implementation programs which are consistent with State and Federal guidelines and which are (i) legally valid, (ii) not unduly costly, and (iii) do not impose undue hardship upon residential property owners and community business interests.
- f. Foster in the citizens of all segments of the city an assurance that their concerns with unwanted sound levels are of importance to the city, and publicize the existence of avenues by which these problems can be quantified and mitigated.

6.2. Declaration of Policy.

The City of Burlingame declares a policy of excluding and prohibiting all annoying, excessive and unnecessary noises from all sources which are subject to its regulatory, administrative and police powers. The City takes notice that for certain intensity levels, noise is detrimental to the health, welfare and enjoyment of the citizenry as well as detrimental to the quality of the environment. The City takes special notice that it is the penetration of unwanted sound from sources not controllable by an individual household that deserve the highest priority in order to insure each person's right to peaceful surroundings.

6.3. Implementation Programs.

There are many possible implementation programs which the City could employ to improve the acoustic conditions within its boundaries; a wide range of such programs is presented in Section Five. The following programs are recommended by Earth Metrics for the City of Burlingame considering the City's noise climate, General Plan and citizen interests. The highest priority programs are discussed first including a discussion of potential problems with their implementation.

Consider Adoption of Administrative Review Process.

The specific content of this program is outlined in detail in Section 5.1. It involves two basic processes already established in the City - the environmental impact review process and the building plan check, permit and inspection process. Regarding the environmental review process, very specific guidelines are given in Sections 5.1.1 and 5.1.2 which will aid the Planning Department in (i) its determination of the need for an environmental impact report with regard to noise impacts of certain projects, and (ii) the design of the scope of work for environmental impact reports assessing various types and magnitudes of acoustic impact. Regarding the building plan check, permit and inspection process, Section 5.1.3 outlines specifically (i) the type of

acoustic data which should be required of all proposed buildings which are subject to the provisions of the State Uniform Building Code (see pages 4-3 and 4-5; the State Housing Act specifically requires that the precise location of 60 CNEL line be determined)* and (ii) the contents of the required acoustic analysis to be performed by acoustic consultants or a staff member trained in acoustic analysis.

This recommended administrative review process can be built upon the City's existing process with more specific guidelines and procedures relating to acoustic impacts of proposed projects and buildings. The City may require a conditional use permit if proposed projects, buildings, subdivision maps, tentative parcel maps or recordings do not meet the outdoor noise level planning criteria in Table 4-2, page 4-4. It may require more time on the part of city staff especially during its initial phase-in period. Depending upon the amount of follow-up time available in the Building Department, an acoustic check could be added to the existing building inspection process. This would require a short course for building inspectors in order that they might become familiar with inspection techniques used to assure that the proper type of acoustic materials have been installed and that they have indeed been installed properly. Improper installation of insulation materials can render them useless. Problems for the City with the administrative review process would probably center around staff time constraints and small processing problems expected during the first few months.

Airport Noise Surveillance Program.

The airport noise surveillance program is discussed in detail in Section 5.2.1. It is recommended that this program be instituted for a period of two to three years. Each year, airport noise would be monitored during the storm weather season to obtain a running record of the worst-case noise (relative to Burlingame) caused by that source. The monitoring program would consist of approximately 20-25 measurements per year; some 24 hour measurements might be necessary.

* The City of Burlingame should request both ALUC and SFO to identify the 60 CNEL line in order that State Housing Act provisions relating to airport noise might be enforced in the City.

Depending upon the outcome or trends monitored by such a survey, subsequent action by the City could take many different courses. The Planning Commission and/or City Council could address letters to various organizations responsible in one way or another for the control of airport noise; these organizations are listed in Section 5.2.1. One good application of these yearly surveys would be to use them as a check to see that the San Mateo County Airport Land Use Commission's adopted CNEL contours are correct and up-to-date relative to Burlingame; these adopted contours should tend to overestimate rather than underestimate the areas exposed to airport noise. The fact that Burlingame has such an on-going airport surveillance program should, in itself, assure responsible noise monitoring by other governmental agencies.

Consider Vehicle Noise Emission Standards Enforcement.

The vehicle emission standards enforcement program is presented in Section 5.3.2. The recommended program would work in the following way; during one week per month for a period of three to four months, one police officer and one noise consultant (with noise monitoring equipment) would work together. This team would choose and set up the monitoring equipment on a suitable street. The street chosen should have enough traffic to provide a good sample of vehicles but not so much traffic as to prevent or seriously hamper the police officer from stopping and citing illegal vehicles. As vehicles pass by, the noise consultant would tell the police officer which of them violated the standard; the police officer would then stop and cite the identified vehicles.

This program is recommended for many reasons. It helps to ease the Police Department personnel into the rather technical noise field instead of having them thrust into it immediately by being responsible for the operation of newly-acquired noise monitoring equipment. The Police Department personnel can slowly become accustomed to the noise equipment and terminology while being initially responsible for stopping and citing illegally-noisy vehicles. In addition, the City in general, and the Police Department in particular can slowly gain a working knowledge of this type of enforcement program

and the minor problems involved. One possible problem the City should be aware of related to citizen reaction; even though over 70 percent of the people responding to the Noise Questionnaire advocated limited to strong control for automobiles, trucks and motorcycles, there may be some adverse citizen reaction to such a vehicle noise emission enforcement program, especially from those people cited for violation. There are many positive reactions which could also occur; one illegally-loud vehicle can annoy many many people. This program could be specifically focused at trucks and/or motorcycles; these vehicle classes are the noisiest on the road and citizens surveyed were highly in favor of strong control over them.

Consider Municipal Vehicle and Maintenance Operations Noise Control.

This program is recommended in order that the City set a good example of noise abatement by assuring that all city operated vehicles conform to the standards listed in Tables 4-4, 4-5 and 4-6. In addition to this, the City should make a concerted effort to assure that all of its maintenance operations such as street repaving, tree trimming, sewer and park maintenance are conducted in the quietest manner possible and avoid noise-sensitive hours (evening and nighttime) whenever possible. This program should not require significant extra staff time but will require constant attention and possible financial outlay for modification of noisy equipment.

Educational Campaign.

It is recommended that consideration be given to an educational campaign to describe to the citizenry of Burlingame their noise climate and what they can do to change it. One or a series of small pamphlets and bumper stickers could be designed to educate the public about the major contributors to the noise problem, the major methods of dealing with noise and the small things which every citizen can do to help lower the noise climate of the City and Bay Area in general. Such pamphlets could also be consumer-oriented, advising citizens how to insulate, where to get a better vehicle muffler and how much they should pay for these various items. Such pamphlets could be sent out with utility bills and passed out to churches and libraries.

Consider Adoption of Noise Ordinance.

After review of several noise ordinances including one from the airport noise impacted City of Inglewood, the League of California Cities Model Noise Ordinance was chosen as best for Burlingame; it is reprinted as Appendix F. It is a general noise annoyance ordinance which has provisions covering miscellaneous noise sources such as loud amplified equipment and fans; two sources covered, of special interest to Burlingame, relate to animals and fowl, and train horns and whistles. The ordinance should be studied in detail with deletions made according to the wishes of the City. For instance, the animal and fowl section might be deleted until San Francisco's experience is monitored and analyzed as mentioned below in the domestic animals program.

Updating of the Noise Element

The noise element should be updated to account for current traffic levels, land uses, and source characteristics whenever any of the following occur:

- (i) The entire General Plan is updated.
- (ii) Major traffic additions or rearrangements exist compared to the base year of 1975.
- (iii) Major new industrial sources are introduced.
- (iv) Major rail traffic increases are made.
- (v) 1980 is reached or a population of 35,000.

At that time, the data base should be assessed, new forecasts made, the ordinance reviewed and planning procedures updated.

Bayshore Freeway Noise Attenuation Study

The City should consider a study regarding the costs and effectiveness of construction of a noise barrier, or the insulation of existing houses and apartments along Bayshore Boulevard from Cadillac Way on the north to Peninsula Avenue to the south; noise barriers and insulation are discussed in Section 5.3.7 and Appendix A. Bayshore Freeway along this length causes very great noise impacts to be imposed upon the residential area immediately adjacent to Bayshore Boulevard and Freeway; this is the residential area in Burlingame impacted most by noise as can be seen on the maps in Section Three.

A detailed acoustic analysis would be required to ascertain whether or not an effective noise barrier wall could be designed or effective insulation materials installed in existing dwelling units along this section of Bayshore Freeway. Topography, height of existing and future housing along Bayshore Boulevard, the great numbers of vehicles which utilize Bayshore Freeway daily, the great percentage of trucks which use the freeway and many other factors must be studied in detail in order to assess the effectiveness and proper design of such a wall. A wall might also act to protect this residential area from air pollution. As most land along Bayshore Boulevard in this area is already developed with two story apartment buildings, noise insulation of the existing structures would seem to be the most effective way of protecting these dwellings from the noise; this is especially true of the second story apartments which will not be protected by a one story wall. Insulation for noise would also act as insulation from cold in the winter and heat in the summer.

With regard to Bayshore Freeway in general, local legislators, city officials and city staff should utilize their influence to urge CALTRANS to improve existing freeway design (including interchanges) in Burlingame. Freeway noise contours and actual measurement sites contained in this Element define the extent of these noise problems along Bayshore Freeway.

Domestic Animal Noise.

A program or ordinance relating to domestic animal noise is not recommended at this time. Presently, the City of San Francisco is instituting such a program; their program operates as follows. A dog barking or whining for a period of ten minutes is considered a nuisance and a citizen witnessing such an occurrence can register a complaint with the Police Department. An officer is then sent out to bear witness to the same occurrence and to see that the dog is not barking or whining for good reason (i.e. burglar). If it is found to be a nuisance, a citation (carrying approximately 15 - 500 dollars fine) can be issued to the dog's owner. An ammendment currently pending would allow the police officer to issue a citation without himself bearing witness if a total of two complaints are received from two separate nearby residences.

Considerable adverse citizen reaction is very possible with the institution of such a program. One complaint encountered in San Francisco is that citizens do not want police services allocated to this type of enforcement. It is recommended that Burlingame defer institution of such a program until further results of San Francisco's experience can be monitored and evaluated.

REFERENCES

- 3-1 Measurement of Noise, Airport Land Use Committee of Santa Clara County, December, 1972.

- 3-2 Telephone Conversation with Don Beier of the San Francisco International Airport, August 19, 1975.

- 3-3 Development of Ground Transportation Systems Noise Contours for the San Diego Region, Wyle Laboratories, 1973.

- 3-4 David Dietz, "Despite Tough Law, Don't Expect Less Noisy Jets", San Francisco Sunday Chronicle and Examiner, August 3, 1975, p.8.

- 4-1 Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, United States Environmental Protection Agency, March, 1974.

- 4-2 Federal Highway Administration, Policy and Procedure Memorandum 90-2, February 8, 1973.

- 5-1 Fifth Annual Report of the Council on Environmental Quality, December, 1974, p. 167.

PREPARATION OF NOISE ELEMENT

The following Earth Metrics staff persons were involved in the preparation of this Noise Element together with Wayne Swan and John Yost of the City's Planning Department:

C. Michael Hogan, President
Leda C. Patmore
Donald Lauritson
Russ Willis

TECHNICAL APPENDIX A

Noise: A Summary of Sources, Abatement, Health Effects, Definitions and Information Sources.

A.1 Sources of Noise.

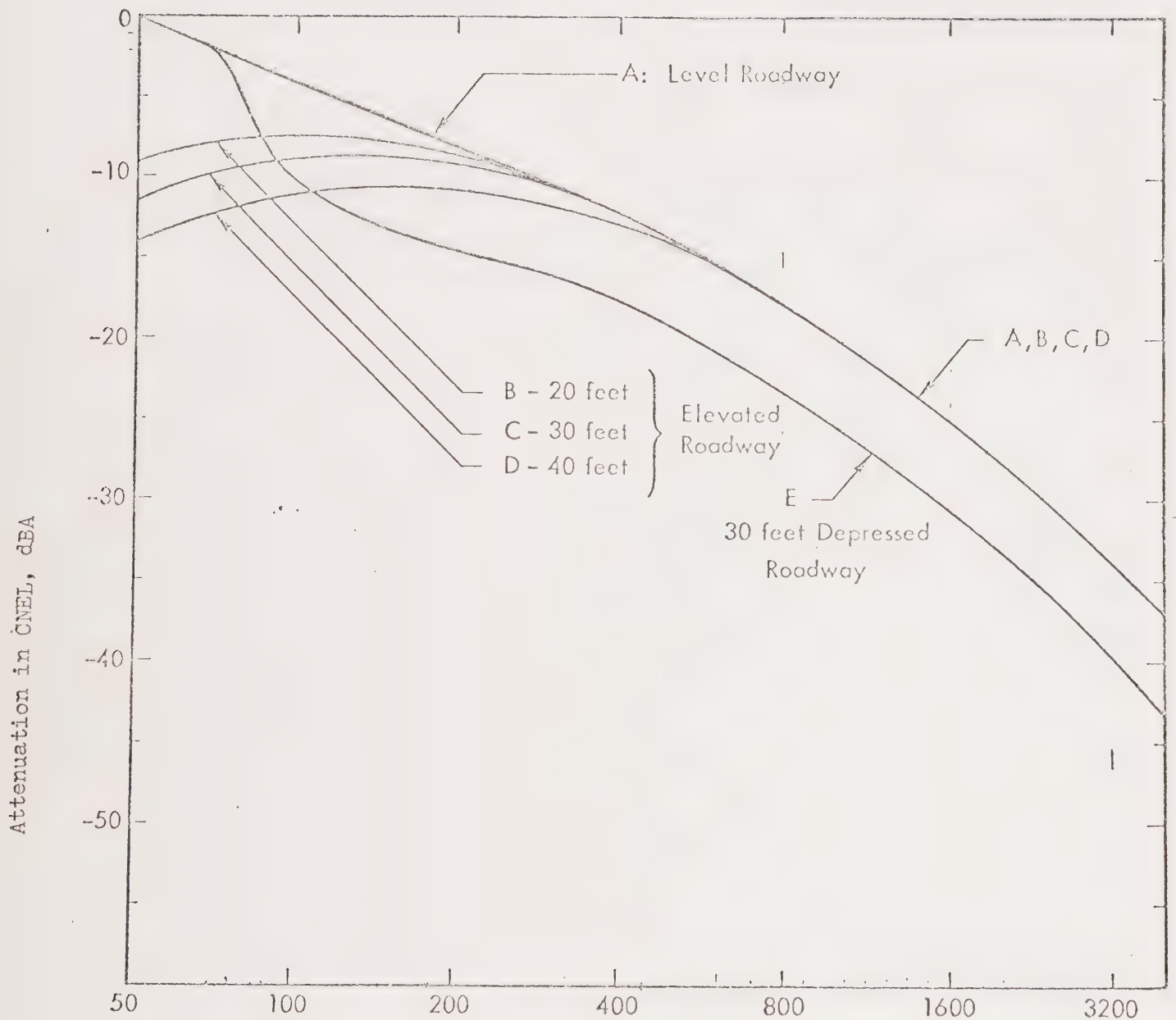
The major contributors to transportation noise in Burlingame are automobiles, trucks, motorcycles, trains and aircraft. Automobiles individually produce lower noise levels than do the others; however, because of their great number, it is also important to understand and control automobile noise. Factors which influence noise levels emitted from a vehicular source are age and type of vehicle, engine type, speed, type of road, road surface, size of load, engine size and number of tires.

For automobiles, it has been found that noise from tires and air friction dominates engine and exhaust noise at all speeds. However, motorcycle and truck noise is dominated by noise from the engine and exhaust rather than tire and air friction noise. The major components of railroad noise are engine noise, wheel-rail interface noise, and whistle noise. The two major components of aircraft noise caused by jet engines are the roar of the jet exhaust from the turbulent mixing of high velocity exhaust gases with the ambient air, and turbomachinery and fan noise from turbulence produced by rotating blades in the engine. Comparative noise emissions for the various vehicle types are: automobiles, 70 dBA; motorcycles and gasoline powered trucks, 75 dBA; and diesel trucks, 85 dBA. In addition to transportation noise, fixed-point or stationary noise sources contribute to the noise climate in Burlingame. One example of a stationary noise of particular concern is the automatic car wash.

A.2 Noise Abatement.

A.2.1 Distance.

Noise from a line source such as a stream of highway traffic decreases as the distance between source and receiver increases. This relationship is shown in Figure A-1.



Distance from Center Line of Outer Traffic Lane, feet.

Figure A-1. Approximate CNEL Propagation of Highway Traffic Noise for Level, Elevated and Depressed Roadway Configurations.

Source: Development of Ground Transportation Systems Noise Contours for the San Diego Region, Wyle Laboratories, 1973.

A.2.2 Barriers.

The most successful method of abating noise is the use of solid dense walls, 10 to 12 feet high as sound barriers near major sources of noise. Reduction of up to 15 dBA are obtained with relatively high barriers. However, although the path of the sound wave is blocked, the problem of noise is not completely eliminated as the sound waves diffract around the barrier. The amount the noise is reduced depends on the distance from the source to the barrier, on the distance between the barrier and the receiver, and the heights of the source, the barrier and the receiver.

Table A-2 shows the results of tests performed to evaluate the effectiveness of barriers. As can be seen, solid walls are effective in reducing noise levels.

Table A-2. Maximum Noise Reduction of Barriers.

Observer Distance from Barrier (feet)	Height of Barrier (feet)			
	6 feet	8 feet	10 feet	12 feet
10'	15 dBA	15 dBA	15 dBA	15 dBA
50'	13 dBA	14 dBA	14 dBA	15 dBA
100'	12 dBA	13 dBA	14 dBA	14 dBA

A.2.3 Terrain.

Terrain can affect noise levels. It can act as a barrier or as a reflector. While an elevated roadway exposes a greater area to sound waves than a roadway which is level with the surrounding terrain, a depressed roadway exposes a smaller area.

A.2.4 Landscaping.

Trees and shrubs are not effective in blocking sound produced on a roadway. Ground covers, however, can help to abate noise levels, since much of the sound can be absorbed. Trees and ground covers used together have a synergistic effect on noise abatement since the trees (or shrubs) help to diffuse sound waves so that more sound is directed toward the ground, where it can be absorbed by the ground cover. In addition, there are the obvious aesthetic benefits to be derived; very attractive and effective landscaped earth berms can be designed with a short wall on top of the berm. The ground cover planted on the earth berm helps diffuse the sound waves so some can be absorbed by the berm and the remainder can be blocked by the wall.

A.3 Health Effects of Noise.

The health effects of noise on people can be divided into two categories, psychological and physiological. People who are regularly exposed to high noise levels may be less sensitive to community noise. Also, continuous noise has been found to be less annoying than intermittent noise. A good example in Burlingame is the relative annoyance levels of the constant low level background noise of the airport as opposed to the intermittent jet takeoffs.

Physiological effects include loss of hearing, speech interference, sleep disturbance and vasoconstriction (constriction of the veins). Loss of hearing does not usually occur as the result of community noise, as high levels and long exposure times are required. Table A-3 shows standards set in the Occupational Safety and Health Act for occupational use. Speech

Table A-3. Hearing Damage Risk Criteria.*

Duration Per Day (hours)	Sound Level (dBA)
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

* Source: Walsh-Healy Noise Regulation published in Federal Register Vol. 34, No. 96, May 20, 1969.

interference indoors is complex because of the reverberent build-up of sound in a closed room. Studies have shown that for acceptable speech indoors, the Leq noise level should be 45 dBA. This allows for a Leq noise level outside the building of 60 dBA (obviously, this may vary with wall thickness, building insulation, etc). The levels at which sleep disturbance occur vary with individuals. However, sleep intrusion can occur at levels as low as 35-40 dBA. By 55-60 dBA almost 50 percent of the population experiences sleep disturbance (is caused to awaken or experience a change in depth of sleep). Vasoconstriction occurs for levels greater than 70 dBA and the degree of constriction is proportional to the number of decibels by which the level exceeds 70 dBA.

Psychological effects include annoyance, stress, and deterioration of work performance. The level at which annoyance occurs varies with setting and the specific activity in which one is engaged. The level at which stress is caused is dependent on the individual and the setting. It has been found that performance of work can be affected at levels of 65 dBA for some individuals. Noise can also affect the accuracy and the amount of work produced by students; this is important with regard to Burlingame because of the large number of schools which are impacted by noise.

A.4 DEFINITIONS.

Noise.

Any erratic, unwanted random sound within the normal frequency limits for hearing can be defined as noise.

Frequency.

Frequency is a measure of the pitch of a noise. The lower the frequency the lower is the pitch; for example, a base note. The higher the frequency, the higher is the pitch; for example, the squeal of automobile brakes. The unit of measurement of frequency is the cycle per second or hertz.

Decibel.

The decibel is the most commonly used unit to express sound level relative to a reference sound pressure of 20 microneutrons per square meter (the threshold of human hearing). Sound levels in decibels (dB) are calculated on a logarithmic basis. An increase of 3 decibels represents a doubling of acoustic energy. An increase of 10 decibels represents a 10-fold increase in acoustic energy, and an increase of 20 decibels corresponds to a 100-fold increase in acoustic energy. An increase of 10 dB is usually perceived as a doubling of noise.

Sound Level.

Sound level (noise level) is the intensity of the noise source. Sound levels may be expressed in any of several measurement scales, the most common of which are denoted, A, B, C or D.

Sound Level Meter.

A measurement instrument, containing a microphone, an amplifier, an output meter, and one or more frequency weighting networks; it is used for the determination of noise and sound levels.

A-weighted Scale.

The A-weighted scale approximates the frequency response of the human ear by placing most emphasis on the frequency range of 1000 to 6000 hertz.

A-weighted noise measurements in dB are written dBA.

L₁₀.

The L₁₀ is a unit of noise which represents the sound level exceeded 10 percent of the time for the period under consideration. This value is an indication of both the intensity and frequency of occurrence of the loudest noise events and correlates well with human annoyance. This unit is sometimes used for making planning decisions on the compatibility of land use types.

L₅₀.

Similar to the L₁₀, L₅₀ is a unit of noise which represents the sound level exceeded 50 percent of the time for the period under consideration.

Ambient Noise.

The total level of all noise near and far, in a given system or environment, independent of the specific source being measured. The L₅₀ is usually considered the ambient noise level.

L_{eq}.

Energy Mean Equivalent Level (L_{eq}) is the average noise level based on the average energy content of the sound. L_{eq} is not measured directly but is calculated from sound pressure levels measured in dBA. Its value is that of a steady - state sound which produce the same total acoustical energy during that period. L_{eq} is the basis for the L_{DN} scale.

CNEL.

CNEL (Community Noise Equivalent Level) is a scale devised by the State of California and employed in the recently enacted State Housing Act. This scale divides the 24-hour day into three periods (day, evening and night) with progressive penalties for evening and nighttime noise. Title 4 of the Administrative Code defines daily CNEL as follows:

"Daily Community Noise Equivalent Level (CNEL): Community noise equivalent level, in decibels, represents the average daytime noise level during a 24-hour day, adjusted to an equivalent level to account for the lower tolerance of people to noise during evening and nighttime periods relative to the daytime period."

The CNEL scale weights evening noise (1900-2200) three times that of daytime noise (0700-1900) and nighttime noise (2200-0700) ten times that of daytime noise.

Noise Contours.

Noise contours are lines passing through points where equal levels of noise intensity exist. Such contours delineate bands of varying width emanating from a noise source.

Receptor.

A receptor is that structure, person, or land use which receives noise emanating from a noise source.

Fixed Point Source.

A fixed point source refers to any stationary source of noise (e.g. factory).

Line Source.

A line source refers to a stream of transportation generated noise, such as may be produced from traffic, trains and airplanes.

Average Daily Traffic (ADT).

The arithmetic mean of daily traffic volumes usually for a period of one year.

Major Arterial.

An arterial street of 4 or more lanes ususally with an Average Daily Traffic volume in excess of 10,000 and providing through traffic movement between areas and across the City, generally with direct access to abutting property.

Noise Attenuation.

The ability of a medium to reduce the level of a noise source, specified in decibels (dB) of transmission loss.

Noise Impacted Area.

A specific area exposed to substantial levels of noise, usually described by a cumulative exposure rating scale.

Noise Performance Standards.

A standard based on permitted emissions rather than on the category or type of land use affected.

Noise Sensitive Land Uses.

Noise sensitive land uses include but are not limited to: residential, hospitals, schools, libraries, churches, unsoundproofed offices, hotels and motels and outdoor recreational areas. The use of land in which individuals are or can be particularly affected by noise is determined by such factors as psychological impairment, sleep disturbance, speech and talk interference and annoyance.

Day-Night Average Sound Level (Ldn).

The A-weighted average sound level in decibels during a 24-hour period with a 10 db weighting applied to nighttime sound levels (10 p.m. to 7 a.m.). This exposure method is similar to the CNEL but deletes the evening time period (7 p.m. to 10 p.m.) as a separate factor.

PART III PLAN DIAGRAM

Resolution No. 24-75

Plan Diagram Revised April 21, 1975

AMENDING PART III GENERAL PLAN
TO RESTRICT RESIDENTIAL DENSITIES IN R-1 AND R-2 DISTRICTS
TO THOSE PERMITTED BY THE PRESENT ZONING CODE

WHEREAS, the City Council of the City of Burlingame adopted Ordinance No. 539 entitled "An Ordinance Repealing Part X, Article 50 of the Ordinance Code of the City of Burlingame and Adopting a New Part X, Article 50 providing for the Establishment of Districts within the City: Regulating the Use of Said Districts as Indicated on the Zoning Maps of the City of Burlingame; Repealing All Ordinances in Conflict Therewith" on January 15, 1954; and

WHEREAS, said Ordinance No. 539 is the zoning ordinance of the City of Burlingame, and, as amended from time to time, is now set forth in the Municipal Code in Title 25 (ZONING); and

WHEREAS, the current official zoning map of the City of Burlingame was republished per Resolution No. 13-73 adopted by the City Council on the 20th day of February, 1973; and

WHEREAS, the City Council of the City of Burlingame adopted a general plan entitled "GENERAL PLAN FOR BURLINGAME" by its Resolution No. 87-69 entitled "Adopting General Plan," on October 20, 1969; and

WHEREAS, a Negative Declaration, ND-51P, was prepared for revisions to Part III General Plan and posted January 17, 1975; and

WHEREAS, the Burlingame Planning Commission has noticed and held two public hearings, on November 25, 1974 and on January 27, 1975, for the purpose of considering revisions of Part III of the General Plan; and

WHEREAS, the Planning Commission has studied General Plan modifications that would make it more nearly coincide with the zoning map, favored retaining existing R-1 zoning, and recommended that methods be established to deal with legal non-conforming uses and illegal uses; and

WHEREAS, the City Council has noticed and held a public hearing on April 21, 1975 for the purpose of considering an amendment of Part III of the General Plan for Burlingame, as shown in the General Plan Studies Map, so that Part III will be made identical with the present zoning code in those R-1 and R-2 Districts where Part III of the General Plan now projects a higher density than that allowed by the present zoning code;

NOW, THEREFORE, IT IS HEREBY RESOLVED AND DETERMINED THAT:

1. With the exception of Area A (Reference Exhibit H of Part III General Plan, Staff Review dated November 25, 1974) which is the Pringle Apartment complex located at the corner of Trousdale and Skyline Boulevard and that portion of Area F which fronts on Capuchino between Carmelita and Broadway, Part III of the General Plan shall be amended so that the General Plan Map will be made identical with the present zoning code in those R-1 and R-2 Districts where Part III of the General Plan now projects a higher density or a different use than that allowed by the present zoning code.

2. The various land uses authorized by the zoning ordinance (Burlingame Municipal Code, Title 25, ZONING) are compatible with the objectives, policies, general land uses and programs specified in the General Plan.

3. The Burlingame Zoning Ordinance and the Burlingame General Plan are consistent within the meaning of Government Code §65860.


MAYOR

I, HERBERT K. WHITE, City Clerk of the City of Burlingame, do hereby certify that the foregoing Resolution was introduced at a regular meeting of the City Council held on the 21st day of April, 1975, and adopted thereafter by the following vote:

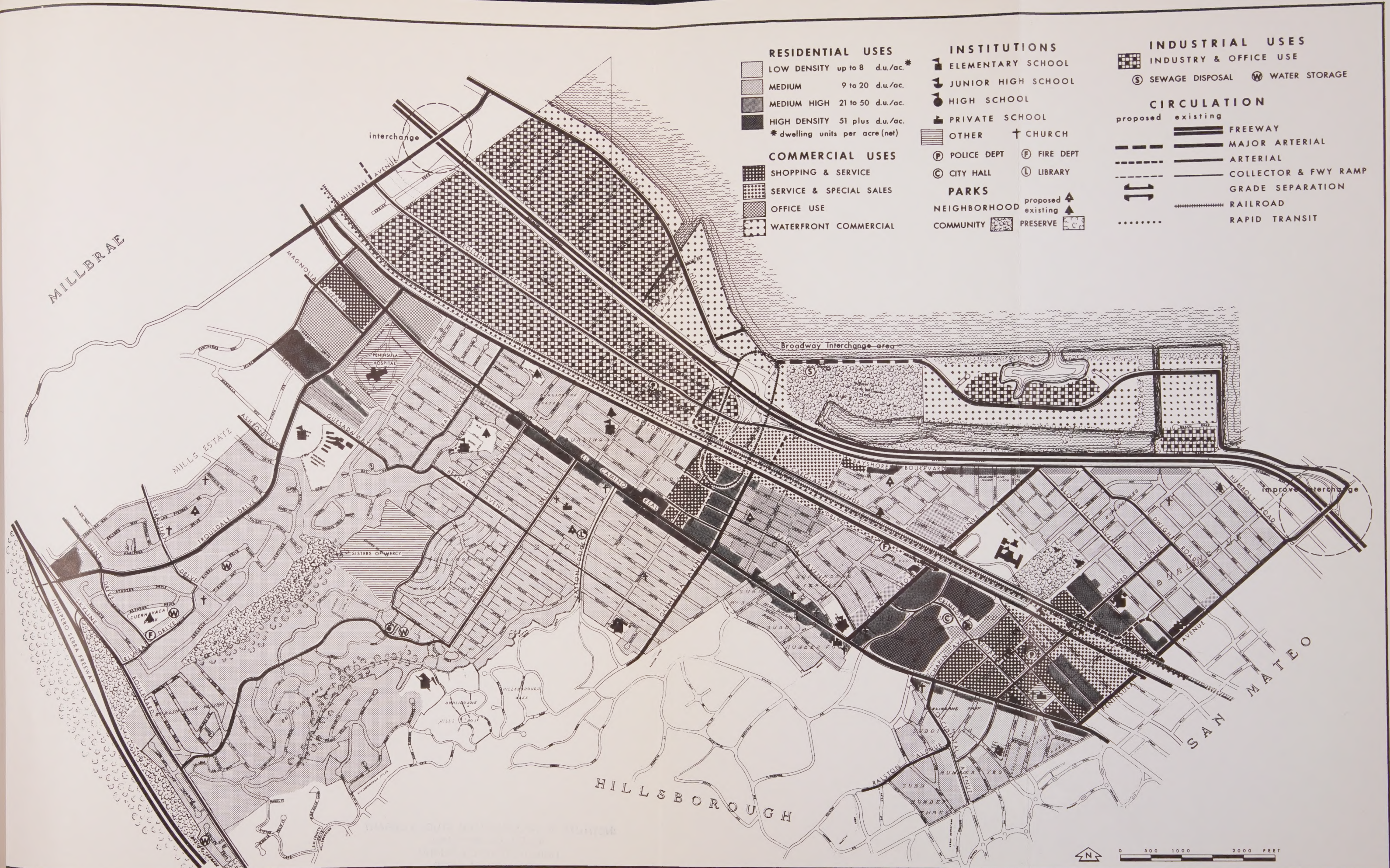
AYES:	COUNCILMEN:	Amstrup-Crosby-Cusick-Harrison-Mangini
NOES:	COUNCILMEN:	None
ABSENT:	COUNCILMEN:	None


CITY CLERK

I DO HEREBY CERTIFY THAT THE FOREGOING IS A FULL, TRUE AND
CORRECT COPY OF RESOLUTION NO. 24-75 DULY AND REGULARLY
ADOPTED AT A MEETING OF THE CITY COUNCIL OF THE CITY OF
BURLINGAME HELD ON APRIL 21, 1975.

EVELYN H. HILL, CITY CLERK

Evelyn H. Hill



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